UNIVERSITY OF GONDAR
COLLEGE OF MEDICINE AND HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG PEOPLE LIVING WITH HIV/AIDS IN SOUTH WOLLO ZONE, NORTH EAST ETHIOPIA, 2011

By

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Acronyms

- AIDS= Acquired Immuno Deficiency Syndrome
- AOR= Adjusted Odds Ratio
- ART = Anti retroviral therapy
- CSA= Central statistics agency
- CD4 = Cluster Differentiation 4
- HAART= Highly active anti retroviral therapy
- HIV= Human Immuno Deficiency Virus
- HRQOL= Health related quality of life
- OR = Odds Ratio
- PLHIV= People living with Human Immuno Deficiency Virus
- QOL= quality of life
- Rx = Treatment
- SD = Standard Deviation
- VCT = Voluntary Council ling and Testing
- WHO= World Health Organization
- WHOQOL-HIV = World Health Organization's Quality of Life HIV instrument

ABSTRACT

Background: Health-related quality of life is becoming an increasingly important issues associated with HIV disease. Identification of factors that determine health related quality of life are important in order to better tailor health and social care services, and there by improve the functioning and well being of people who are living with HIV. However, little is known about the health related quality of life of people living with HIV in this region.

Objective: The main aim of this study is to assess health related quality of life and associated factors among adult people living with HIV/AIDS in South Wollo Zone, North East Ethiopia.

Methods: An institutional based cross-sectional study was conducted from, June 1-30, 2011, in selected health institution in south Wollo zone, North East Ethiopia. Systematic random sampling was utilized to select 394 PLHIV; Data on quality of life was collected by trained nurses through face to face interviews using the Amharic version of the World Health Organization quality of Life Instrument for HIV clients. Data was entered to EPI INFO version 2002 and exported to SPSS versions 16.0 for further analysis. Descriptive statistics, such as mean and standard deviation, were used to summarize the score of health related quality of life. Independent sample t- test was also used to test mean difference among different health related quality of life domains. Binary Logistic regression, multiple Liner regression were used to determine the factors which affects Health related quality of life of people living with HIV.

Result: Health related quality of life data were available for 394 persons giving a response rate of 100%. Most of the study(71.1%) participants were ART Naïve while 29.9 % were taking antiretroviral medication .The mean score of health related quality of life was 13.61 (SD=$\pm$ 2.09) . Nearly half 47.2% of all respondents 144 (52.2%) of the ART naïve and 42 (35.6%) ART group did have poor quality of life with mean $\pm$ SD score 14.3 (SD=$\pm$1.7) Vs 13.3 (SD =$\pm$ 2.2) ART groups & ART Naïve respectively (tdf 392 = 4.39, P< o.oo1). In the multivariate analysis PLHIV on ART (AOR = 2.77, 95% CI: (1.61, 4.78)). Those in the 2nd & 3rd income percentiles were (AOR = 2.95, 95% CI:

(1.17, 7.42) (AOR = 3.68, 95% CI (1.15, 11.78),Have more than 95 % adherence to ART (AOR: 3.43, 95% CI: (1.52,7.70), Having treatment supporter (AOR = 1.94, 95% CI, (1.18, 3.19) and have emotional Care giver (AOR =,95% CI, 2.21 (1.15,4.27) were predictors of good health related quality of life. On multiple linear regression highest contribution for quality of life were from environmental domain (B=0.251), Social relationships (B=0.143) and Physical domain (B=0.137) domains (P <0.001)

Conclusion and Recommendation: Nearly half of the study population is in poor quality of life. Those who have emotional care giver; income opportunities & good adherence to ART have demonstrated good quality of life. In all aspects, the problem prevails in ART naïve group. Clinicians need to provide educational and counseling programmes for PLHIV and their family members side by side to treatment, assigning social worker & adherence counselors in ART clinics is highly beneficial .

1. INTRODUCTION

1.1. STATEMENT OF THE PROBLEM

Quality of life is a multi-dimensional construct that refers to physical, psychological and social aspects of an individual. These are indicators of how well an individual functions in daily life as well as of how the individual's perceptions of how health status influences his or her life (1). I.e. How an HIV patient experiences the disease symptoms and adapts to the financial and social changes after having been infected is just as important as disease progression and treatment (2).

Measures of HRQOL are commonly used in determining the effects of medical and community-based health interventions by comparing the general health of different Populations and assessing their health needs and increasingly being recognized as important when comparing the efficacy of AIDS therapies and assessing the impact of HIV/AIDS on peoples' lives (3) .The development of antiretroviral therapy (ART) has dramatically lowered morbidity and mortality in countries where it is widely available (4). Many people living with HIV/AIDS (PLHIV) have a better quality life as the result of increasing availability of antiretroviral therapy (ART). Nevertheless, many patients who live in sub Saharan Africa the devastating physical effects have been replaced by psychological conditions including social isolation, condemnation of their family, friends and society indicating high level of stigma and discrimination. The psychological and social effects of Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) on patients' quality of life (QOL) have been constantly fluctuating (5).

Globally an estimated 40.3 million people were living with HIV/AIDS by the end of 2010, with two thirds of the world's burden in sub-Saharan Africa. The estimated 1.3 million people who died of HIV related illnesses in sub-Saharan Africa in 2009 comprised 72% of the global total of 1.8 million deaths attributable to the epidemic (4). In Ethiopia alone, more than 1.2 million people are HIV positive in 2010 of which 520,000 had AIDS. HIV/AIDS in Ethiopia is a leading cause of death and was responsible for 38% of

premature mortality by 2010 (6). AIDS also impairs health related quality of life (HRQOL), which is an important measurable outcome of HIV treatment in the era of Highly Active Antiretroviral Treatment (HAART), complementing more objective outcomes such as death (7, 8).

The Health related quality of life has never been investigated among people living with HIV (PLHIV) in the region; this study therefore aimed at to examine the health related quality of life and associated factors including life needs among people who are living with HIV (PLHIV) at different stages of their illness in the north east region of Ethiopia.

1.2. LITERATURE REVIEW

1.2.1. Quality Of Life PLHIV

QOL is a term that is popularly used to convey an overall sense of well-being and includes aspects, such as happiness and satisfaction with life as a whole. QOL relates both to the adequacy of material circumstances and to personal feelings about these circumstances with overall subjective feelings of well-being that is closely related to morale, happiness, and satisfaction. QOL has recently been scientifically-defined and it has been considered synonymous with health status, function status psychological well being, happiness with life, satisfaction of needs, and assessment of one's own life (21)

The benefit of antiretroviral therapy has been documented elsewhere. The varieties of treatment options available have decreased opportunistic infections, morbidity and mortality. Social, emotional and informational support on the other hand have decreased stigma, increased, disclosure and demand for voluntary counseling and testing and have given better clinical benefit in terms of Virological suppression having the knowledge of these undeniable advantages, what other negative effects do exist? How were they measured (9)

Survey on living conditions and quality of life among PLHIV conducted in Norway, in 2002; the general income of PLHIV is on the same level as the general population, but 44% of the respondents compared with 9% of the general population have problems covering daily expenses. The majority is open about their HIV status towards at least one person, but there has been also a closed world. More than 1/3 of the respondents were abstain for sex and experience less physical contact. The physiological condition is worse than in the average population. PLHIV complain bi-effects of the HAART and want to strengthen their immune system through alternative means. There is a demand for a more holistic approach in health services (10).

A cross-sectional study to investigate Quality of life in people living with HIV/AIDS in Lebanon by Sarah Abboud et.al showed that the mean age of respondents was 38

years (SD±9.93). The mean QOL-HIV score was 176.85, Norway, 2002 with the highest scores for the cognitive functioning, social functioning, and medical care; the lowest domain scores were for financial status, sexual functioning, and mental health. A single item measuring overall QOL was rated by 47.5% as neither poor nor good. Mean stigma score was 2.05 (SD_0.62) and mean HIV Symptom Index score was 0.6. Prevalence of symptoms and perceived stigma were negative predictors of QOL, being married was a positive predictor of QOL (11).

Another study among HIV- Positive & HIV negative clients in Malawi showed HIV-positive patients had significantly lower physical functioning (p_0.0365), mental health (p_0.001),social functioning (p- 0.0001), and mental component summary (p_0.0069) scores than HIV-negative patients. Further, WHO Stage III HIV patients had significantly lower vitality (p_0.0439) and mental health (p_0.0022) scores than WHO Stages I and II patients. AIDS patients, as determined by CD4 count, had significantly lower bodily pain (p_0.0423) and physical component summary (p_0.0148) scores than non-AIDS, HIV-positive patients (12). A similar finding was observed in Ghana study all Physical mental & social functioning were lower for HIV Positives than their nebougher and families (p<0.005) (13). Unlike the two studies a cross-sectional study done in Nigeria show the overall QOL mean scores in the three domains were similar: psychological health, 15.0±2.8; physical health, 15.2±2.5; and spirituality/religion/personal beliefs, 15.7± 3.4. Lower QOL mean scores were observed in social relationships (13.2±2.5) and environment (13.1±1.9) domains. A significant difference in mean QOL scores in the level of independence domain was observed among women (14.4±1.9) compared to men (13.9±1.7; p=0.028) (14**)**

A cross sectional study which was done among PLHIV and HIV negative in Rwanda showed Scores in the psychological domain and overall quality of life and health satisfaction were high in the self-reported HIV negative and showed statistically significant difference (p<.01). Compared to the PLHIV scoring for psychological domain is improved and possibly reflects a more “stable” psychological state with higher quality of life and health satisfaction in the healthy group (15) similarly a study which was done in Uganda on self-reported quality of life and health status among HIV-infected women

and a comparison sample of HIV-uninfected women showed HIV positive women reported lower scores than HIV-negative women for general health perceptions, physical functioning, pain, energy, role functioning, social functioning, mental health and overall quality of life (p all < /0.01) (16)

A cross sectional study by Amare etal in selected hospitals in Oromia region to see the Tuberculosis and HIV co-infection and its impact on quality of life showed that after controlling for potential confounding variables like age, sex, occupation, CD4 lymphocyte count, WHO staging and social support, co-infected patients had a lower mean/median score in all domains indicating poor QOL. Mean scores for physical health, social relationship and environmental health among co-infected patients were 13.26(SD = 4.3), 12.15(SD = 3.1) and 11.7(SD = 3.6) respectively (17).

1.2.2 Factors Affecting Quality of life among PLHIV

A cross-sectional study on health-related quality of life in persons with HIV infection: results from a multi-site interview project in USA showed factors associated with lower HRQOL scores included older age, female sex, black or Hispanic race/ethnicity, injection drug use, lower education and income, no private health insurance, and lower CD4 count. In multivariate analysis, lower CD4 count was the factor most consistently associated with lower HRQOL. Taking antiretroviral medication was not associated with differences in HRQOL regardless of Cd4 count (18) while a study that was done among 367 patients in Brazil showed the use of antiretroviral drugs was associated with worse QOL in the domain of the level of independence ($P = 0.016$). Being unemployed were associated with a worse QOL ($P < 0.05$) in five out of six domains; the only exception was the domain of spirituality ($P > 0.05$). Among the factors assessed, the socioeconomic aspects were most significant in determining the HRQOL of the patients studied (19).

A cross-sectional survey on factors influencing quality of life of people living with HIV in Estonia by Kristi Rüütel" et al demonstrated Good overall quality of life reported by 42.6% (95% CI: 38.0–47.2%) regarding factors the study showed female gender (p =

0.03); age under30 years (p = 0.009); living in the capital city (p = 0.0001); being employed or studying (p < 0.0001); being legally married (p = 0.004); being aware of their infection for less than 12 months (54% vs. 41%, p = 0.02); having no HIV-related symptoms, (p < 0.0001); and CD4 count above 300 cells/mm3, (p = 0.0003) while In Multivariate analysis in this study, being currently employed or studying (AOR: 2.27, 95% CI: 1.18–4.38) and the absence of HIV-related symptoms (AOR: 2.31, 95% CI: 1.24–4.29) were identified as independent predictors of good QOL (20). Similarly a cross- sectional study done In Iran on health related quality of life showed Gender, marital status, level of education, CD4 count, and clinical stage of the disease, had a significant effect on the quality of life of the patients. In multivariate analysis, the most important predictor of the quality of life was clinical stage of the disease (21**)**

Another study in India showed women are more affected than men in all QOL dimensions. Similarly, comparisons between symptomatic patients and AIDS patients showed significant correlation in case of domains of physical activities, daily activities, social activities and food intake and appetite (P=0.015, 0.010, 0.003 & 0.008 respectively) (22). Unlike the above study, a cross sectional study done among PLHIV and HIV negative in Rwanda show HIV positive patients at stages III and IV had their physical and environmental dimensions negatively affected compared to early stages. In early stages, those in stage II had their psychological dimension impaired compared to stage I. In stages III and IV, overall quality of life was impaired as well as impairment of physical and environmental health. Scores in the physical domain also higher in the younger age group with a statistically significant difference (p<.001). This would suggest more physically robust health in the younger age group compared to the more elderly HIV patients who may have increasing physical disability (15)

Similarly a cross sectional study conducted in Oromiya Regional state, Ethiopia among 467 HIV patients and 124 TB/HIV co-infected patients. on quality of life indicate depression, having a source of income and family support were strongly associated with most of the QOL domains. Aged ≤35 had better mean scores for scales of Physical, limitation in role due to physical health and physical-health component summary score.

Those aged 36 and above scored better for scales of general, Social, and, mental health .In co-infected patients, individuals with depression were 8.8 times more likely to have poor physical health as compared to individual who had no depression ,OR = 8.8(95%CI: 3.2, 23). Similarly those without family support were 1.5 more likely to have poor physical health in co-infected and mono-infected patients Similarly, depression, family support and having a source of income were strongly associated with psychological health Among co-infected patients, depressed individuals were 5 times more likely to have poor social relationships as compared to individual without depression [OR = 5.3, (95%CI: 2.3, 14.2)]. Depression was also associated with poor quality of the social QOL domain among HIV patients OR = 2.4, (95%CI: 1.6, 3.6)]. Family support was associated with social relationships in HIV patients with and without co-infection ($P < 0.001$). Educational status was significantly associated with the environmental QOL domain. Literate individuals were 4 times more likely to have good QOL as compared to illiterate ones, OR = 4, (95% CI: 2.3, 7.3) (17) similarly another study conducted in selected hospitals in southern Ethiopia show Marital and education status were shown to have the same effect on the measured parameters. Married participants as well as those that had attained a secondary school education had better scores than the unmarried and uneducated participants in all scales except for social and mental health (23)

1.3. JUSTIFICATION OF THE STUDY

In Ethiopia, more than 1.2 million people are HIV positive in 2010, of which 520,000 had AIDS [19]. HIV/AIDS in Ethiopia is the leading cause of death and was responsible for 38% of premature mortality by 2010 In Amhara region, more than 379,096 people are living with HIV/AIDS in 2010 that takes urban rural prevalence of 9.8% & 1.4% respectively. Hence forth, the region is among the highly affected regions in Ethiopia.

Many of these HIV positive patients struggle with numerous social problems such as stigma, poverty, depression, substance abuse, and cultural beliefs which can affect their quality of life not only from physical health aspect, but also from mental and social health point of view and cause numerous problems in useful activities and interests of the patients. Unless a cure is found or a life-prolonging therapy can be made more widely available, the majority of people living with HIV or AIDS will be continuing a victim of this disease with serious impact on their quality of life. Determination of factors affecting HRQOL can help to select the best method of therapy and doing the best to treat these patients. Therefore, the efficacy of HIV/AIDS care is increased.

Health related quality of life (HRQOL) has never been investigated among people living with HIV and AIDS (PLHIV) in the region. By examining HRQOL and associated factors, this study therefore will provide valuable base line information on these issues in the region. In addition it will also play a great role in devising mechanisms regarding the care needed for people living with HIV/AIDS to improve their lives. Moreover, it will have important input for devising strategy and clinical guideline (management protocol development) at ART treatment sites in line with the ART treatment guideline.

2. OBJECTIVES

2.1. GENERAL OBJECTIVE

To assess health related Quality of life and associated factors among adult people living with HIV/AIDS in South Wollo Zone, North East Ethiopia, 2011

2.2. SPECIFIC OBJECTIVES

- To determine level of health related quality of life of adult people living with HIV/AIDS

- To identify factors associated with health related quality of life among adult people living with HIV/AIDS.

3. METHDOLOGY

3.1. STUDY DESIGN

An institutional based cross sectional study was conducted in South Wollo zone, North East Ethiopia.

3 .2 STUDY AREA AND PERIOD

The Study was conducted in South wollo zone, particularly in Dessie Hospital, Dessie Health Center & Kombolcha Health Center , south wollo zone is one of the 11 Zones in the Amhara Region this Zone has a total population of 2,870, 476 of those 1,423,756 were male and 1,446,720 were female (24)

About 45,334 People are ever enrolled for HIV/ AIDS care & treatment of those 15,336 currently taking ART. All the health centers are giving VCT service but ART service is provided in one referral hospital, two district hospitals and fifteen Health centers. Dessie HC, Kombolcha HC & Dessie Referal Hospital were selected for this particular study. The reason for choosing this one hospital and the two health centers were because of high numbers of patients were being enrolled **(**62% of PLHIV) enrolled in these facilities. Monthly these three health institutions provide care & treatment for an average of 2377 ART and ART Naive clients. The study was conducted from June 1-30, 2011.

3.3 SOURCE POPULATION

PLHIV who were attending clinical care & treatment follow up at Health facilities in south Wollo zone.

3 .4 STUDY POPULATION

PLHIV who were attending clinical care & treatment follow up at Dessie Hospital, Kombolcha Health center & Dessie Health Center.

3.5. INCLUSION & EXCLUSION CRITERIA

The Inclusion Criteria

- All PLHIV come for clinical care & treatment follow up were included in the study.

The Exclusion criteria

Severe psychiatric or cognitive problems

Seriously ill

Started ART in less than 3 months were excluded

3.6. SAMPLE SIZE AND SAMPLING TECHNIQUE

3.6.1. Sample Size Determination

After computing for all the variables the minimum sample size is calculated as 394 subjects by considering normal distribution using sample size calculation for single mean for cross-sectional study and based on the following formula and assumptions (including 15% non response rate).

Hence physical domain provides the maximum sample size and it is used to determine the sample size calculation for QOL.

$$n = \pm^{2}\left(\frac{z}{SE}\right)^{2}$$

Variable	Standard Deviation (σ)	Confidence interval (CI)	Standard error (SE)	Minimum sample size
Physical Health	2.8	95%	0.3 %	334.65
Psychological Health	2.5	95%	0.3 %	266.78
Social relationship	2.8	95%	0.3 %	334.65
Environmental Health	2.7	95%	0.3 %	311.17
Level of independence	2.8	95%	0.3 %	334.65
Spiritual health	2.8	95%	0.3 %	334.65

n = required minimum sample size

σ= 2.8 is estimate of population standard deviation (population standard deviation taken from the study done in oromia region (17)

Z^2α/2 = 1.96 is z score for selected confidence level (CI at 95%)

SE = standard error of the mean (margin of error desired 0.3)

Allowing for a contingency due to non-response (a rate of 15%)

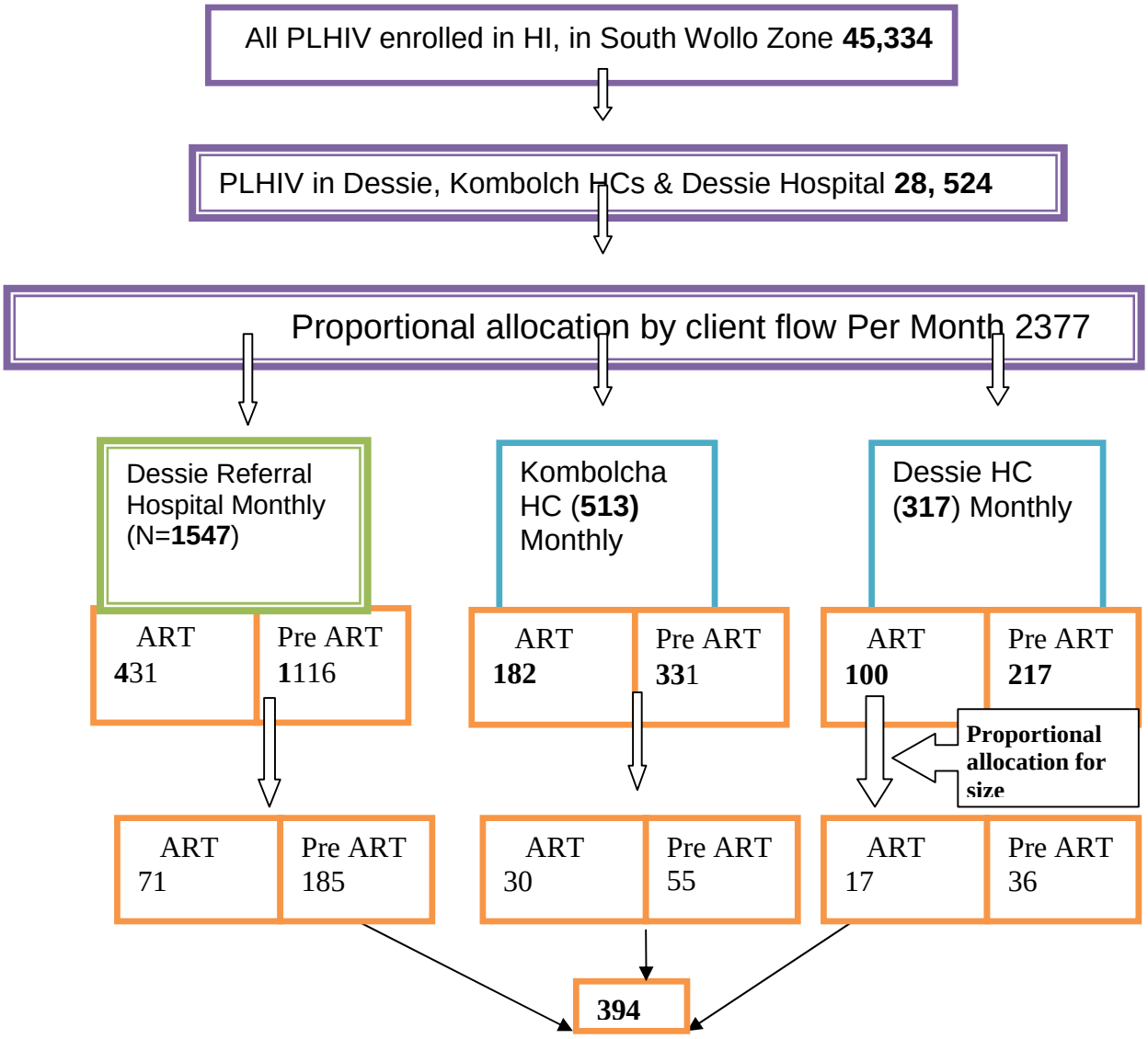
n= (1/(1-0.15)) x 335= 394 PLHIVs

The final sample size was 394 PLHIVs (118 ART& 276 ART naive)

3.6.2. Sampling Techniques

Initially the Hospital and health centers are selected based on the high case loads they have. Then a systematic random sampling technique was employed after proportional allocation of the calculated sample size. Every 6th (K= 2377/394) consecutive adult out patients who were receiving antiretroviral treatment (at least for three months) and ART Naive clients on follow up and those who were able to give informed consent during the study period was the study subjects. The sampling interval K= 6 was selected based on the monthly number of patients compared with the sample size .The first sample was selected by lottery method from numbers one to six.

Fig.1. Schematic presentation of the sampling technique



3.7. VARIABLES

- **Dependent variable**: Health Related Quality of life (HRQOL)

- **Explanatory variables for the main outcome variable**;

- **Socio demographic characteristics**: - Residence , Age, Sex, Marital Status, Religion, Availability of paid job , Monthly income and Educational status

- **Clinical variables**
  - ✓ WHO clinical stage of the disease
  - ✓ HIV helper cell count (CD4+) counts
  - ✓ Prophylactic medication
  - ✓ Duration of treatment for HAART
  - ✓ Duration for knowing HIV status
- **Behavioral variables**
  - ✓ Adherence to dose of ARV
  - ✓ Adherence to treatment (follow up) schedules
  - ✓ Presence of financial/material support
  - ✓ Physical, emotional and treatment care giver

3.8. DATA COLLECTION TECHNIQUE AND MATERALS

A structured pre-tested standardized, but locally adopted World Health Organization's quality of life HIV bref instrument (WHOQOL-HIV) was used for data collection. The WHOQOL-HIV bref consists of 29 facet which are subsumed in six domains and two general item that measures the overall QOL & general health perceptions, with each item using a 5-point Likert scale with 1 indicates low or negative perceptions & five indicating better quality of life. Some facets (pain and discomfort, negative feelings, dependence on medication, concerns about the future, bodily image and appearance, death and dying) are not scaled in a positive direction, meaning that for these facets higher scores do not denote higher quality of life. These need to be recoded so that high scores reflect better QoL. The 29 items are distributed in six domains of QOL as follows: Physical health, psychological health, level of independence, social relationships environment, and spirituality/religion/personal beliefs .The physical health domain measures pain and discomfort, energy and fatigue, and sleep & rest and symptom of PLHIV. The psychological health domain measures positive feelings, thinking, learning, memory and concentration, self esteem, bodily image and appearance, and negative feelings. The level of the independence domain measures mobility, daily life activities, dependence on medications or treatments, and work capacity. The social relationships domain includes personal relationships, social support, and sexual activity. The environment domain measures physical safety and security, home environment, financial resources, health and social care, accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation and leisure activities, and physical environment (pollution, noise, traffic, climate, and transport). The spirituality/religion/personal beliefs domain measures forgiveness and blame, concerns about the future, and death and dying.

First facet means were examined; Facet scores are the mean of the four items in each facet. Domain scores are obtained by adding the facet means in the respective domain, dividing by the number of facets in that domain, and multiplying by 4, to transform to

domain score of HRQOL ranged from 4 (minimum) to 20 (maximum), with higher scores indicating a better QOL and to be comparable with WHO HRQOL 100.

Data on socio-demographic and care & support characteristics was collected by pre tested questionnaire. Clinical characteristics (CD4 count, WHO staging, prophylaxis drug for opportunistic infections) were identified from patient's records. Internal consistency reliability scale was examined by using Cronbach's α and it was calculated for each of the six dimensions of HRQOL and relationship between various domains of the quality of life was assessed by Pearson's correlation coefficient. Cronbach's α of 0.7 or above was considered acceptable.

Three supervisors and 6 nurse data collectors were assigned for the interview and data collection (one supervisor and two data collectors at each health facilities) trained for two days on how to facilitate & collect the data. Data collection was conducted for one month starting from Jun 1-30, 2011. During the data collection, respondents were arranged in a manner that could ensure their privacy during the interview.

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3.9. DATA MANAGEMENT AND QUALITY CONTROL MEASURES

The instrument is derived from standard data collection tools prepared by WHO. It was pre-tested for consistency of responses by taking 5% of the sample size, conducted in a similar population in Boru Meda Hospital. Necessary modifications were made accordingly before use.

Two days training was given to supervisors & data collectors on instructions on how to fill the questionnaire. Additionally, it was made clear to data collectors by preparing data collection manual.

The PI & supervisor were closely followed the day-to-day data collection process and ensure completeness and consistency. All incomplete questionnaire was returned back daily. To maintain validity the World Health Organization's quality of life HIV (WHOQOL-HIV) questionnaire was translated to Amharic according to local setting and back translated to English by principal investigator and language experts. Double data entry was made to ensure quality of data.

3.10. DATA PROCESSING AND ANALYSIS

All returned questionnaires were checked for completeness and consistency of responses manually. In line with this, Data was coded and entered in to EPI INFO version 2002 and export to SPSS version 16 for analysis.

Descriptive statistics, such as mean and standard deviation were used to summarize the score of HRQOL. For the analysis of statistical differences between the mean scores of HRQOL for dichotomous variables, the student t-test was used. The level of statistical significance was set at $P<0.05$; then multivariate analysis was used to determine the presence of statistically significant associations between the dependent variable (HRQOL) and the independent variables.

3.11. OPERATIONAL DEFINIATION

- **Quality of Life** - an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. By taking the mean (if the distribution is found to be normal) or the median, (if the distribution is found to be skewed) QOL was dichotomized as poor or good.
- **Good quality of life** - Participant who score greater than or equal to the mean or median value of HRQOL define as having good quality of life
- **Poor Quality of life**- - Participant who score less than the mean or median value of HRQOL define as having poor quality of life
- **Adherence-** the extent to which a patient follow medical instruction
- **Good Adherence** -is greater than or equal to 95% of adherence (Missing less than or equal to 2 doses out of 30 or 3 doses out of 60 doses).
- **Fair Adherence** -is between 85- 94% of adherence (Missing 3 to 5 doses out of 30 or 3 to 9 doses out of 60)
- **Poor Adherence**- is less than 85 % of adherence (Missing greater than 6 doses out of 30 or greater than 9 doses out of 60).

3.12. DISSEMINATION OF RESULTS

Final result of this paper will give to school of public health of University of Gondar. The results of this paper will also be disseminated to all stakeholders including the FMOH, Amhara Regional health Bureau, South wollo zone Health department, to the health institutions & other NGOs and GOs.

An Attempt will also make to present the paper at conferences and to publish on reputable research Journal.

4. Ethical Consideration

Ethical clearance letter was obtained from University of Gondar Institutional Review Board (IRB) and Officials at different levels, south Wollo health department and the selected health institutions were communicated through formal letters from UOG. Informed consent was obtained from all study participants by reading written Informed consent form after clearly told about the purpose and objective of the study and the variety of information needed. Prior to starting of the interview all the study participants were assured that the data was anonymous, names or any personal identifiers were not recorded. Participants were given the chance to ask any doubt about the study and made free to refuse or stop the interview at any moment they want.

5. RESULT

5.1. Socio-demographic Characteristics of the Respondents

A total of 394 PLHIV were interviewed and HRQOL data were available for all 394 persons, giving a response rate of 100%. Nearly 61 % of the respondents (62.6%of the ART Naïve & 55.9% ART groups) were females with male to female ratio of 0.40:0.60. Seventy four percent of respondents were Urban by residents and majority were age less than 49 years (96.4%) with a mean ±SD age of 32.7 ± 7.8 years. Of this nearly 37 % of respondents were young people ages less than 30 years. Only 4.7% of ART naïve groups had college or university education while 26. 3 % of ART group had. Overall 11.2% PLHIVs had either college or university educations while 19.8% & 23.4% are unable to read & write and read & write respectively. The majority 61.9% of adult PLHIV were ever married at the time. About 77.4% had some job for pay. Of those who had job for pay 29.8 % have income of less than 400 Ethiopian Birr with Mean ±SD income =766.5±592.5; minimum 50 birr & maximum 4000 birr per month .The socio-demographic features of the study subjects are shown in (Table 1).

Table 1: Distribution of adult PLHIV by Socio demographic characteristics and treatment status, South Wollo Zone, North east Ethiopia, June 2011

variable	ART Naïve n = 276 (71.6%)	On ART n= 118(29.9%)	Total n=394	Mean ± SD
Age 19-24	**31 (11.2%)**	**7 (5**.9 %)	**38 (9.6**%)	**32.7 ± 7. 8 years**
25- 29	**76 (27.5%)**	**30 (25.4**%)	**106 (26.9**%)	
30-34	**59 (21.4%)**	**31 (26.3**%)	**90 (22.8**%)	
35-39	**57 (20.7%)**	**25 (21.2%)**	**82 (20.8**%)	
40-44	**33 (12%)**	**11 (9.3%)**	**44 (11.2**%)	
45-49	**13 (4.7%)**	**7 (5.9%)**	**20 (5.1**%)	
>50	**7 (2.5%)**	**7 (5.9%)**	**14 (3.6**%)	
Sex				
Male	**103 (37.4**%)	**52 (44.1**%)	**155 (39.3**%)	
Female	**173 (62.6**%)	**66 (55.9**%)	**239 (60.7**%)	
Residence				
urban	**203 (**73.6%)	**90 (76.3**%)	**293 (74.4**%)	
rural	**73 (**26.4%**)**	**28 (23.7**%)	**101 (25.6**%)	
Religion				
Muslim	**139 (50.4**%)	**65 (55.1**%)	204 (51.8%)	
Christians	**137 (49.6**%)	**53 (44.9**%)	190 (48.2%)	
Marital status				
Never married	**35 (12.7**%)	**12 (10.2**%)	**47 (11.9**%)	
Married	**167 (60.5**%)	**77(65.3**%)	**244 (61.9**%)	
Divorced	**44 (15.9**%)	**19(16.1**%)	**63 (16.0**%)	
Widowed	**30 (10.9**%)	**10 (8.5**%)	**40 (10.2**%)	
Education				
Illiterate	68 (24.6%)	**10 (8.5%)**	**78 (19.8%)**	
Read & write	50 (18.1%)	**42(35.6%)**	**92 (23.4%)**	
Primary	62 (22.5%)	**16(13.6%)**	**78 (19.8%)**	
Secondary	83 (30.1%)	**19 (16.1%)**	**102 (25.8%)**	
College/ university	13 (4.7%)	**31 (26.3%)**	**44 (11.2%)**	
Ethnicity: Amhara	**253 (91.7**%)	**111 (94.1%)**	**364 (92.4%)**	
Tegrie	**16 (5.8**%)	**4 (3.4%)**	**20 (5.1%)**	
Others	**7 (2.5**%)	**2 (1.7%)**	**10 (2.5%)**	
Have a job for pay				
Yes	**210 (76.1%)**	**95 (80.5%)**	**305 (77.4%)**	
No	**66 (23.9%)**	**23(19.5%)**	**89 (22.6%)**	
Income				
Low Income (≤ 400 ETB)	**26 (27.4%)**	**65(31.0%)**	**91 (29.8%)**	
Medium Income (401-999 ETB	**50 (52.6%)**	**104(49.5%)**	**154 (50.5%)**	
High Income (> 1000 ETB	**19 (20.0%)**	**41(19.5%)**	**60(19.7%)**	

5.2. Reliability & validity of the instrument (Amharic version of WHOQOL-HIV bref)

To measure internal consistency, a reliability analysis was done and the Cronbach's alpha was calculated for each domain of the instrument.. In our finding Cronbach's alpha was (α = 0.86) which (ranges from 0.82 for environmental to 0.86 for social & spiritual domains) which exhibits high internal consistency. All scores of domains were correlated with the total measure of the quality of life significantly (P<0.05). The most significant positive correlation was observed for the Psychological & Independence Domains (r2= 0.72 each) with the total score. However, a weak correlation was observed between overall score & spiritual health (r2= 0.52) P< 0.01 (Table 2).

Relationship between various domains of the quality of life (inter domain correlation) was assessed by Pearson's correlation coefficient at (95% CI two tailed test). All scores of domains were correlated with each other and of the quality of life significantly (P<0.01). The most significant positive correlation was observed between the social and environmental domains (r2= 0.63 P< 0.01) while the least was observed between social and spiritual domains (r2= 0.30 P< 0.01) (Table 3).

Table 2: Internal consistency of the Amharic version of the WHOQOL-HIV questionnaire

QOL- Domain	Mean (SD) Score	Cronbach's α	Number of items	Correlation coff. (r^2)with the total score	Test of significance at df= 6
Physical	15.12 (3.05)	.83	4	.68	P=(.000)
Psychological	13.60 (2,49)	.83	5	.72	
Independence	13.68 (2.73)	.83	4	.72	
Social	12.64 (3.13)	.86	4	.58	
Environmental	13.13(2.71)	.82	8	.75	
Spiritual	14.64(2.60)	.86	4	.51	
Total	13.61(2.09)	.86	29		

Table 3: Correlation between domains of the Amharic version of the WHOQOL-HIV questionnaire**

	Physical	Psychological	Independence	Social	Environmental	Spiritual
Physical	1.00					
Psychological	.60	1.00				
Independence	.63	.60	1.00			
Social domain	.39	.48	.49	1.00		
Environmental	.57	.65	.61	.64	1.00	
Spiritual	.48	.47	.42	.30	.39	1.00

** Correlation is significant at the 0.01 level (2-tailed)

5.3. Clinical and Care & support characteristics of adult PLHIV

Most of the study populations were ART Naïve (70.1%) while 29.9 % were taking antiretroviral medication. Nearly 14% of ART group taking antiretroviral medication did have a CD4 count of <200, compared to 55.9% with a CD4 count of 200–500(Fig 1&Fig 2). Majority of the ART Group were aware of their HIV status between 1-5 years while nearly half 49.3% of the ART Naïve group enrolled to ART care in less than 12 months. Regarding financial support only 15 % (15.6 % of the ART naïve & 13. 6% of the ART group have got financial support from different organization (Table 4).

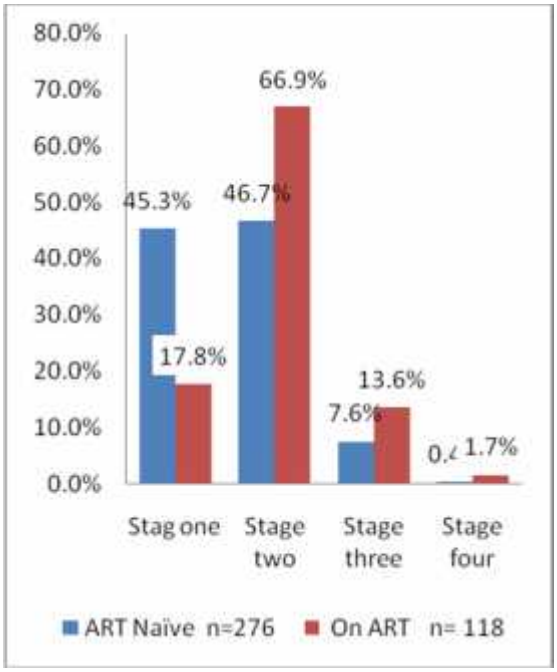

Fig-2: Distribution of PLHIVs by WHO clinical staging & treatment status, South Wollo Zone, NE Ethiopia, June 2011

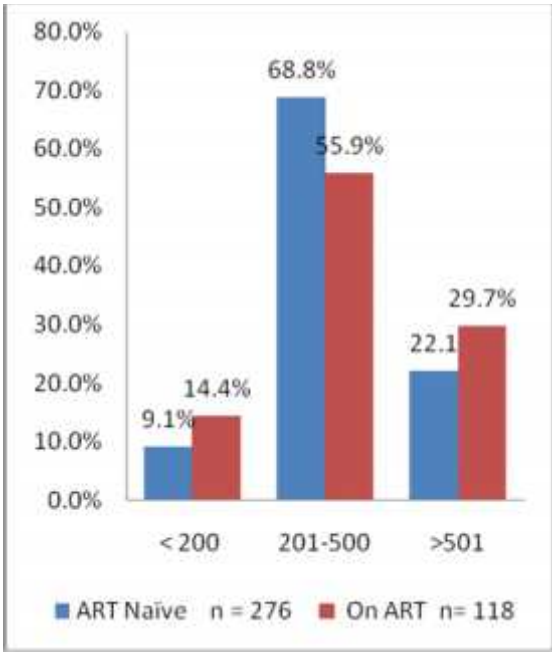

Fig-3: Distribution of PLHIVs by CD4 T lymphocyte count & treatment status, south Wollo zone NE Ethiopia, June, 2011.

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Table .4: Distribution of PLHIV by clinical, care & Support characteristics and treatment status, South Wollo Zone, NE Ethiopia, June 2011

Clinical variables	ART Naive n = 276 (71.1%)	On ART n= 118(29.9 %)	Total n=394
Currently On opportunistic disease prophylaxis drug			
Yes	**188 (68.1%)**	**91(77.1%)**	**279 (70.8%)**
No	**88 (31.9%)**	**27(22.9%)**	**115 (29.2%)**
Duration of knowing HIV status			
< one year	**136(49.3%)**	**7(5.9%)**	**143 (36.3%)**
1-5 year	**120(43.5%)**	**86(72.9%)**	**206 (52.3%)**
>5years	**20 (7.2%)**	**25(21.2%)**	**45(11.4%)**
Physical care giver			
yes	**111(40.2%)**	**45 (38.1%)**	**156(39.6%)**
no	**165(59.8%)**	**73 (61.9%)**	**238(60.4%)**
Emotional care giver			
yes	**40 (14.5%)**	**27(22.9%)**	**67 (17.0%)**
no	**236(85.5%)**	**91(77.1%)**	**327 (83.0%)**
Treatment buddy			
yes	**122(44.2%)**	**62 (52.5%)**	**184(46.7%)**
no	**154(55.8%)**	**56(47.5%)**	**210 (53.3%)**
Financial Support			
yes	**43 (15.6%)**	**16 (13.6%)**	**59 (15.0%)**
no	**233 (84.4%)**	**102- 86.4%**	**335(85.0%)**

5.4. Level of health related quality of life of adult PLHIV

Analysis was done to determine the 6 domains that measures HRQOL of PLHIV, Accordingly nearly 60 % of respondents claimed that they satisfied regarding their own overall health with mean ±SD score of (3.67±0.91). Moreover only 34.5 % of respondents were not bothered about their physical change (mean ± SD 3.82±1.12). The mean ±SD transformed HRQOL physical domain score for the study participant were 15.2 ±3.05 & there exists a mean difference between ART & ART Naïve Groups where the ART naive mean ±SD domain score 14.77 ±3.13 while ART groups have Mean ±SD=15.94+2.68 ,P<0.001 (Table 5). Additionally PLHIV on ART and ART Naïve Groups where better satisfied in terms of spiritual domain (i.e. Forgiveness and Blame, Concerns about the Future, & -+Death and Dying) with mean ± SD score (15.41±2.81) for both groups (Table 5).

PLHIV also express they are less satisfied with the social domain that includes Personal relationships, Social support, Sexual activity &Social Inclusion which shows an individual's perception of his/her relationships with self, family and friends and the ability to carry out his/her role in the community. Mean +SD domain score for this domain were (12.64+3.13) for all respondents and 12.43+3.16 and 13.13+3.0 for ART naïve & on ART groups respectively (P=0.42). Finally overall QOL was computed and nearly half 47.2% of all respondents (144 (52.2%) of ART naïve Vs 42(35.6%) on ART did have poor quality of life. Fig 4 the box & whisker plot demonstrates a significant difference observed in total quality of life among PLHIV on ART & ART Naïve group with mean± SD (14.3 ±1.7 Vs 13.3± 2.2) respectively (t df 392 = 4.39, P <o.oo1).

Table 5: Health related quality of life score by domain & treatment status in South Wollo Zone, North East, Ethiopia, 2011

Domain	*Facets/ Items*	*Mean Facet Score (Min 1 & Max 5*	*MEAN ±SD*		*Total MEAN ±SD*	*t*	*P value*
			ART	ART NAÏVE			
Domain I Physical			15.94±2.68	14.77±3.13	15.12 ±3.05	3.55	***.000***
	Pain and discomfort	2.13					
	Energy and fatigue	3.62					
	Sleep and rest	3.81					
	Symptoms of PLHIV*	2.18					
Domain II Psychological			14.42±2.3	13.25±2.5	13.6±2.49	4.37	***.000***
	Positive feelings	3.54					
	Learning, & Concentration	3.43					
	Self-esteem	3.70					
	Bodily image and appearance	2.78					
	Negative feelings	3.55					
Domain III: Level of Independence			14.56±2.7	13.30±2.7	13.6±2.73	4.28	***.000***
	Mobility	3.96					
	Activities of daily living	3.96					
	Dependence on medication	3.44					
	Work capacity	3.81					
Domain IV: Social Relationships			13.13±3.0	12.43±3.16	12.64±3.13	2.04	***.042***
	Personal relationships	3.58					
	Social support	3.09					
	Sexual activity	3.01					
	Social Inclusion	2.96					
Domain V: Environment			13.77±2.47	12.86±2.8	13.13±2.471	3.06	***.002***
	Physical safety and security	3.39					
	Home environment	3.35					
	Financial resources	2.68					
	Health & social care: accessibility & quality	3.90					
	Opportunities for information & skills	3.10					
	Opportunities for recreation	2.98					
	Physical environment	3.40					
	Transport	3.47					
Domain VI Spirituality & Personal Beliefs			15.41±2.81	15.41±2.81	14.64±2.6	3.92	***.000***
	SRPB	3.35					
	Forgiveness and Blame	2.39					
	Concerns about the Future	2.35					
	Death and Dying	2.07					
Overall quality of life & general health perceptions		3.61					

There was a significant difference observed in total quality of life among PLHIV on ART & ART Naïve group with mean ± SD (14.3 ±1.7 Vs 13.3 ± 2.2 respectively (t df 392 = 4.39, P <o.oo1).

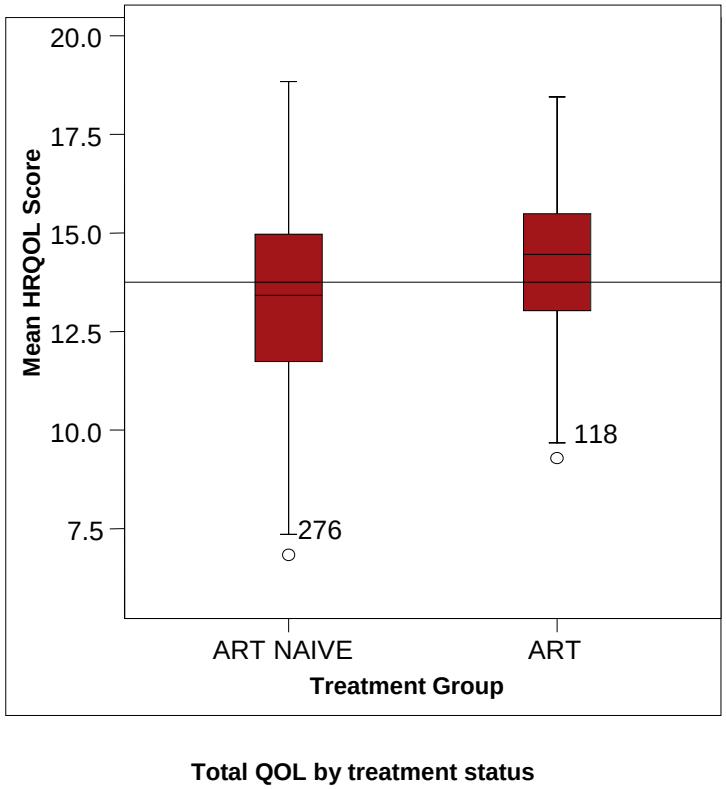

Fig .4 . Box and whisker graph shows mean total QOL score of PLHIV by treatment status, South Wollo Zone, North East, Ethiopia, June 2011.

5.5 Determinants of health related quality of life

5.5.1 PLHIV Socio-demographic Characteristics

On t test analysis to see the relationship between socio-demographic characteristics & QOL domains, a significant difference in mean HRQOL between PLHIV who resides in urban areas than rural, in the four domains except spiritual domain. Younger PLHIV (age <30) have higher mean HRQOL score than their older counterparts in all HRQOL domains (P<0.5). Literate respondents have better mean HRQOL score than those who can't read and write (P<0.05). Social domain was affected by all socio demographic characteristic. For spiritual domain, mean difference was only observed for age, younger PLHIV have lower mean HRQOL than their older counterparts ($t_{df,\ 392}$ =2.2, (P=0.002). Gender difference were only affect social domain QOL ($t_{df,\ 392}$ =3.14, (P=0.007) (Table 6).

Table:6 Comparison of mean HRQOL scores of PLHIV on physical, psychological, social relation, environmental and Spiritual by their socio-demographic characteristics, South Woll Zone, NE Ethiopia, June, 2011

Variable	*Category*	*Number*	*Physical*			*Psychological*			*Social*			*Environmen*		
			Mean	SD	t	Mean	SD	t	Mean	SD	t	Mean	SD	t
Residence	rural	101	14.2	3.1	4.25**	12.7	2.6	4.4**	11.2	3.1	5.4**	11.4	2.5	8.
	Urban	293	15.5	2.9		13.9	2.4		13.1	3.0		13.7	2.5	
Sex	Male	155	15.1	2.9	0.2[a]	13.6	2.2	0.2[a]	13.3	2.7	3.14*	13.4	2.4	1.
	Female	239	15.2	3.1		13.6	2.7		12.3	3.3		13.0	2.9	
Age	**19-29**	**144**	**15.7**	**3.0**	**2.7***	13.9	2.5	**2.06***	13.1	3.1	**2.12***	13.5	2.6	**2.**
	30-67	**250**	**14.8**	3.1		13.4	2.4		**12.4**	3.1		**12.9**	2.7	
Education	**Can't Read & write**	**110**	**14.5**	**3.0**	**2.5***	13.0	2.7	**2.9***	**11.5**	3.2	**4.4****	**11.9**	2.4	**5.**
	Read &write	**284**	**15.4**	3.1		13.8	2.4		**13.1**	3.0		**13.6**	2.7	
Marital status	**Single**	**150**	**15.1**	**3.1**	**0.13[a]**	13.5	2.8	**0.4[a]**	**11.5**	3.2	**6.2****	**12.9**	3.2	**1.**
	Married	**244**	**15.1**	3.0		13.6	2.3		**13.4**	2.8		**13.3**	2.8	
Monthly Income	**>= 650**	139	15.1	3..2	**.42 [a]**	13.63	2.5	**0[a]**	13.5	2.8	**3.6****	13.7	2.8	**2.**
	<650	166	15.3	3.1		13.63	2.5		12.3	3.0		1.2.9	2.6	

5.5.2 PLHIV Clinical & treatment Characteristics

Among PLHIV, role limitation due to physical problems, environmental health (that is access to treatment, having financial resource & home security etc…) and mental health scores had the greatest differentials between the advanced and early stage patients. Stages I and II patients had higher mean HRQOL indicator scores than advanced stage patients based on abstraction from clinical records ($t_{df=392}$=2.1 , P= 0.037) and ($t_{df=392}$ =2.97.0 , P= 0.003) respectively. In a univariate analysis, the factors which significantly increased the likelihood of good QOL in the domains, Psychological, environmental included, adherent to HAART as defined by adherence >95% were significantly associated with satisfaction in psychological domain ($t_{df=392}$=3.6, P= 0.000). Moreover, duration of knowing HIV status increase the likelihood of having higher satisfaction in health related quality of life. Those acutely aware of their HIV status in less than 12 months were less likely to be satisfied with their physical psychological & spiritual health (P<0.05).

However, CD4 count above 200 cells/mm3, based on abstraction from clinical records were not a factor to increase quality of life (p> 0.05) and the t-score for duration of HAART were not analyzed (only the mean difference is shown) ,Hence the model fail to explain the difference (Table 7).

Table7: Comparison of mean HRQOL scores of PLHIVs on physical psychological, social relation, environmental and spiritual domain by their Clinical parameters, June 2011, S. Wollo Zone, NE Ethiopia, june2011.

Variable	*Category*	*Number*	*Physical*			*Psychological*			*Social*			*Environmen*		
			Mean	SD	t	Mean	SD	t	Mean	SD	t	Mean	SD	t
PLWHIVs WHO Stage	Stage 3 & 4	40	14.7	3.2	.8 [a]	12.8	2.9	2.1*	11.6	3.1	-.2*	11.9	2.6	3.
	Stage 1 & 2	354	15.2	3.0		13.7	2.4		12.8	3.1		13.3	2.7	
Current CD4 Count	<=199	42	14.7	3.1	1.0 [a]	13.5	2.9	.4 [a]	11.9	3.0	1.5 [a]	12.9	3.0	.7
	>=200	352	15.2	3.0		13.6	2.4		12.7	3.1		13.2	2.7	
Duration of HIV Status awareness	< 12 months	143	14.6783	3.02711	2.2*	13.2084	2.7 0689	2.4*	12.3566	3.2 0740	1.3 [a]	12.8 636	3.0 1299	1.
	>=12 months	251	15.3705	3.03483		13.8231	2.3 3648		12.7968	3.0 7808		13.2 888	2.5 1778	
Duration of HAART[b]	< 12 months	9	14.9	1.9		14.0	1.4		11.8	3.9		12.5 556	2.0	
	>=12 months	109	15.9	2.7		14.4	2.3		13.2	2.9		13.8 440	2.5	
Adherence To medication	< 95% Adherence	35	15.0149	2.6	-1.47 [a]	13.1224	2.5	-3.6**	12.8955	2.4	-.8 [a]	13.1 343	2.7	-.
	>=95% Adherence	83	15.6455	2.9		14.4364	2.2		13.2818	3.3		13.5 273	2.6	
Prophylactic /RX of opportunistic infection	Yes	279	14.7	2.9	3.9**	13.4	2.4	2.4*	12.7	3.0	.6 [a]	12.9	2.6	1.
	No	115	16.0	3.2		14.1	2.7		12.5	3.5		13.5	3.0	

a = Non significant,
b = doesn't fit to the model
*significant at the .05 level
**significant at the .01 level

5.5.3. PLHIV Care & Support characteristics

Those that stated to have support from family members for physical care & emotional care giver had better mean scores for HRQOL scales in psychological domain (mental health) than those who did not get support. ($t_{df,\ 392}$=2.0 P <0.1) and ($t_{df,392}$=2.6 P <0.1) respectively. Better emotional care were strongly associated with better mean scores for the HRQOL in all domains scales than those who were not getting emotional support, (P<0.05) (table 7). In the same way, those who got treatment supporter have got improved quality of life in Physical, mental and spiritual health than those who do not have (P<0.05).

However, having financial support didn't seem to impart change on all domains of health related quality of life of PLHIVs (P>0.05 for all domains) (Table 7).

Table: 8 Relation between psychosocial characteristics with the different HRQOL domain in PLHIV attending treatment follow up, South Wollo Zone NE Ethiopia, June, 2011

Variable	Category	Number	Physical			Psychological			Social			Environmental			Spiritual	
			Mean	SD	t	Mean	SD	t	Mean	SD	t	Mean	SD	t	Mean	SD
Physical care giver	yes	156	15.1	3.1	0.8 a	13.2	2.7	2.0 *	12.8	3.0	0.6[a]	13.2	2.8	0.4[a]	14.5	2.6
	no	238	15.1	3.0		13.8	2.3		12.6	3.2		13.1	2.7		14.7	2.6
Emotional Car giver	yes	67	16.3	2.8	3.5**	14.3	2.7	2.6 **	13.4	3.6	3.1* *	13.9	2.7	2.5**	15.7	2.5
	no	327	14.9	3.0		13.5	2.4		12.7	3.0		13.0	2.7		14.4	2.6
Have treatment buddy	yes	184	15.5	3.1	2.4*	13.6	2.7	0. 2 [a]	12.9	3.0	1.7 [a]	13. 5	2.8	2.3*	14.7	2.8
	no	210	14. 8	3.0		13.6	2.3		12.4	3.2		12.8	2.6		14.6	2.4
Financial support	yes	59	15.5	2.9	.97 [a]	14.0	2.2	1.4 [a]	12.7	3.2	.2 [a]	13.16 10	2.6	.1[a]	14.5	2.4
	no	335	15.1	3.1		13.5	2.5		12.6	3.1		13.12 99	2.7		14.7	2.6

5.5.4 Predictors of HRQOL among PLHIV

As it can be noted from the findings of bivariate logistic regression analysis, WHO staging of being in late clinical stage, having low CD4 count, having financial support & physical support were not having association with HRQOL of PLHIV and therefore these variables were not introduced to the multivariate regression. Moreover, sex being female, marital status being single, ethnicity and religion were primary excluded from introducing in the model to the multivariate regression as the model fitting test demonstrate less effect on the dependant variables .

Consequently, in the multivariate regression which controls the undesirable effects of confounding variables was used by taking all the socio-demographic, psychological & clinical variables were analyzed . Accordingly, PLHIV on ART medication demonstrate 2.77 times higher total HRQOL as compared to those ART Naïve (AOR = 2.77, 95% CI: (1.61,4.78)). Younger PLHIV have 2.22 times higher HRQOL as compared to those age greater than 30 years (AOR = 2.22 , 95% CI: (1.33,3.70). Similarly those in the 2nd & 3rd income percentiles were 2.95 and 3.68 more likely to have good health related quality of life (AOR = 2.95, 95% CI: (1.17, 7.42) (AOR = 3.68, 95% CI (1.15, 11.78) respectively (Table 9).

Also In multivariate analysis after including all predictor variables from socio-demographic variables in the clinical and psycho-behavioral variables ; adherence to HAART in greater than 95 % (AOR: 3.43, 95% CI: (1.52,7.70), and being aware of their HIV status greater than one year (AOR= 2.22,95%, CI (1.33,3.70)) , Having treatment supporter (AOR = 1.94, 95% CI, (1.18, 3.19), have emotional Care giver (AOR =,95% CI, 2.21 (1.15,4.27) and got Prophylactic treatment for opportunistic infection(AOR = 2.28, 95% CI, (1.29, 4.03)) were identified as independent predictors of good HRQOL (Table 10).

Table 9: Multivariate analysis of Socio-demographic characteristics associated with HRQOL of PLHIV in South Wollo zone NE Ethiopia, June, 2011.

Variables	HRQOL mean score		Crude OR(95% CI)	Adjusted OR (95 % CI)
	Less the mean 13.60 ((n=186 (47.2%))	**Greater or equal to the mean 13.60((n=208 (52.8%)**		
Treatment Category				
On ART	42 (35.6%	76 (64.4%)	1.97 (1.27, 3.08)	2.77 (1.61,4.78)
ART Naïve	144 (52.2%)	132 (47.8%)	1	1
Age				
19-29	51(35.4%)	93(64.6%)	2.14(1.40, 3.27)	2.22 (1.33,3.70)
>=35	135(54.0%)	115(46.0*)	1	1
Sex				
Male	68(43.9%)	87(56.1%)	.80 (.53, 1.20)	**
Female	118(9.4%)	121(50.6%)	1	
Residence				
Rural	68 (67.3%)	33(32.7%)	1	1
Urban	118 (40.3%)	175 (59.7%)	3.06(1.90, 4.92)	2.21(1.25, 3.90)
Educational status				
Unable to read and write	69 (62.7%)	41(37.3%)	**1**	**1**
Literate	117(41.2%)	167(58.8%)	2.40 (1.53, 3.78)	1.73 (.98,3.08)
Religion				
Orthodox	84 (44.2%)	106 (55.8%)	1	
Muslim	102 (50.0%)	102 (50.0%)	.79 (.53, 1.18)	**
Have a job for pay				
Yes	137 (44.9%)	168 (55.1%)	1.50 (.93, 2.42)	**
No	49 (55.1%)	40 (44.9%)	1	
monthly Income				
≤400 birr	49 (53.8%)	42 (46.2%)	1	1
401-1000 birr	65 (42.2%)	89(57.8%)	1.60 (.95, 2.69	2.95(1.17, 7.42)
≥1000 birr	23 (38.3%)	37 (61.7%)	1.88 (.97, 3.65)	3.68(1.15,11.78)

Note: - Insignificant variable in crude analysis was omitted from entering in to the model and not presented on the table, ** not significant during multivariate analysis, P value < 0.05**.**

Table 10: Multivariate analysis of Clinical factors associated with HRQOL of PLHIVs in South Wollo zone NE Ethiopia, June - 2011.

Variables		HRQOL mean score		Crude OR(95% CI)	Adjusted OR (95 % CI)
		<= 13.60	>=13.60		
PLHIVs WHO Stage	Stage 1 & 2	168 (47.5%)	186 (52.5%)	.91 (.47, 1.75	**
	Stage 3 & 4	18 (45.0%)	22 (55.0%)	1	
Current CD4 Count	<=199	24 (57.1%)	18(42.9%)	1.56(.82, 2.98)	**
	>=200	162 (46.0%)	190(54.0%)	1	
Duration of HIV Status awareness	< 12 months	75(52.4%)	68(47.6%)	1	1
	>=12 months	111(44.2%)	140(55.8%)	1.40 (1.01, 2.10)	2.22 (1.33,3.70)
Adherence to ART (n=118)	> 95% Adherence	30 (50.8%)	18(31%)	2.36(1.28, 4.46)	3.43 (1.52,7.70)
	<=95% Adherence	29(49.2%)	41 (69%)	**1**	1
Prophylactic /RX of opportunistic infection	Yes	144 (51.6%)	135(48.4%)	1.85(1.17,2.90)	2.28 (1.29, 4.03)
	No	42 (36.5%)	73 (63.5%)	1	
Physical care giver	yes	75(48.1%)	81(51.9%)	1.06 (.70 ,1.59)	**
	no	111(46.6%)	127(53.4%)	1	
Emotional Care giver	yes	49 (73.1%)	18 (26.9%)	2.88(1.61, 5.15)	2.21 (1.15,4.27)
	no	159 (48.6%)	168 (51.4%)	1	
Have treatment buddy	yes	109 (59.2%)	75 (40.8%)	1.63(1.09, 2.43)	1.94 (1.18, 3.19)
	no	99 (47.1%)	111(52.9%)	1	
Financial support	yes	23(39.0%)	36(61.0%)	.67(.38,1.19)	**
	no	163(48.7%)	172(51.3%)	1	

*Adjusted for socio-demographic variables a Variable(s) entered on step 1: financial, physical, emotional. Care, treatment, duration, Cd4.numbr, current WHO stage, opportunistic disease Rx, category, residence, age, Education.

5.5.5 Multiple Linear regression

Multiple Linear regression was applied to determine the contribution made by each domain score to explain the observed variance in the general facet. All domains scores and all socio-demographic clinical & care and support variables that were associated at binary logistic regression ($p<0.05$) were entered as independent variables. The dependent variable was the Overall QOL. The resulting model was statistically significant, $P <0.001$, and showed a significant contribution from Environmental Domain (B=0.251), Social relationships (B=0.143), and Physical domain (B=0.137).

Table 11: Multiple linear regression analysis: Predictors of health related quality of life (HIV-QOL)

Variables	Un standardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
Environmental Domain	.251	.013	.370	18.709	.000	.225	.278
Social Domain	.143	.010	.229	14.456	.000	.124	.163
Physical Domain	.137	.011	.206	11.781	.000	.109	.152
PSYOLOGICAL Domain	.136	.014	.183	9.989	.000	.109	.163
Spiritual Domain	.123	.010	.181	12.426	.000	.103	.142
Level of Independence Domain	.123	.011	.179	10.785	.000	.100	.145
Income	.128	.040	.048	3.219	.002	.049	.206
Educational Status	.001	.021	.001	.048	.962	-.040	.042
Age	-.010	.016	-.009	-.657	.513	-.042	.021
Treatment Category	-.034	.052	-.009	-.658	.512	-.136	.068
Residence	-.045	.056	-.011	-.801	.425	-.156	.066
Treatment Adherence	-.089	.049	-.024	-1.820	.071	-.186	.008

a Dependent Variable: Total QOL

6. DISCUSSION

An advent of ART in Ethiopia since 1991 improves the life of many PLHIV who otherwise could die. Health-related quality of life is becoming increasingly important issues associated with HIV disease. Along with clinical indicators of morbidity and mortality, measures of HRQOL (such as physical functioning, mental health) can help guide treatment decisions for both patients and providers. This work contributes to the literature on QOL research in the context of HIV disease and explored the relationship between QOL and socio-demographic, behavioral and clinical variables.

The six domains that yielded one-factor structures (physical, psychological, level of independence, social relationships, environmental and spiritual) had good internal consistency, with Cronbach's alphas ranging from 0.82 to 0.86. These Cronbach's alphas were stronger than those of the WHO quality of life group preliminary study (.45-.86) and the Brazilian study (.32-.88). It was also higher than the study done in southern Ethiopia by Amare et. al. which come up with a finding between 0.57-0,85 (25, 26). Therefore the Amharic version of the WHOQOL- HIV instrument had a good internal consistency to assess the QOL PLHIV. The instrument also demonstrates positive inter domain correlation indicating the instruments had measured the same concept. The WHOQOL-HIV instrument was previously reported to have a good reliability and validity in different cultures worldwide [17, 25]. The mean Overall quality of life & general health perceptions was 3.61 in this finding It is slightly higher than that reported from similar studies from other regions. O'Connell and colleagues have described a mean overall HRQOL & general health perceptions score (measured by WHOQOL) of 3.2 ± 0.88 for a sample of 590 HIV-infected persons from six culturally diverse sites in Australia, Brazil, India (two sites), Thailand and Zimbabwe and a study done in Estonia mean for general health perception (2.90 ± 0.84) this difference might be related to the difference in method Sample characteristics and location of the study.

The mean HRQOL score for the whole sample in our finding is 13.61 (SD= ±2.09), nearly half 47.2% of all respondents (144 (52.2%) of ART naïve and 42(35.6%) ART

group did have poor quality of life .This finding was in agreement with the study done in libanon but is higher than a study done in Indonesia (37.4%) had good quality of life, and 62.6.8%) had poor quality of life (27). However, these studies was used convenience sampling and relatively small sample size. This study is in a contrast to a study by Aeamlaor (2001) who found 92.2% had a good QOL(WHO HIV 100) since they were cared for by social welfare organizations and study in USA & Estonia (18, 20).

In this study, the mean score was highest and similar in the spirituality/religion/personal beliefs & physical health with other findings indicating a better QOL in these domains. However, the mean score for social, environmental & Psychological domains were at the intermediate level. The same finding were documented by Ebisabete *et al.* (2007) in Sao polo brazil (26) and a study done in Kogi state, Nigeria , the results showed that mean scores for social relationships and environment domains fell in the intermediate level, a result observed to be similar with the present study (14). The resulting low level QOL in the social relationships domain could reflect stigmatization and discrimination faced by the participants and issues like personal relationships, sexual activities, and social support of PLHIV can have a negative effect in the social relationship domain.

On multivariate analysis, the subscales that were most predictive of HRQOL were Environmental health, physical functioning and social functioning. These subscales contribute to HRQOL and focus predominantly on access to health care, transportation & management of pain, Social functioning & inclusion (Non stigmatization) and absence of pain etc…the resulting model was statistically significant, P <0.001, and showed a significant contribution from environmental domain (B=0.251), Social relationships (B=0.143), and Physical domain (b_0.321) domains. Unlike this study, a research done by Maria .et.al. among Portuguese PLHIV, showed a significant contribution from Psychological domain (b= 0.256), Level of independence (b=0.204), Social relationships (b=0.143), and Environment domains (b=0 .321).These domains explained 63% of the total variance; the Psychological domain contributed most highly to the observed variance, and Social relationships presented the lowest contribution. The difference may

be due to Portuguese patients may have better access to treatment & transportation and housing (32)

In this study those in the 2nd & 3rd income percentiles were 2.95 and 3.68 more likely to have good health related quality of life (AOR = 2.95, 95% CI: (1.17, 7.42) (AOR = 3.68, 95% CI (1.15, 11.78) respectively than the 1st income percentile group. Education & Age were predictors of HRQOL. Similarly Eriksson et al.'s study in Sweden & Marzieh Nojomi study in Iran demonstrate significant relationship between higher level of education, being employed, and better quality of life , our findings are consistent with previous research, which has demonstrated that employment (and higher income) is associated with a better QOL among PLHIV. Employment may also provide resources, which buffer the effects of the stress of HIV infection and thus serves to maintain a sense of quality of life [21].Therefore, providing employment, financial self-sufficiency, and financial assistance for patients, particularly for women affected by the disease, and making appropriate job safety for patients are the interventions causing promotion in quality of patients' life (20 21, 28).

The significant impact of clinical stage of disease on the quality of patients' life reflects the disabling nature of the disease which affects various aspects of patients' quality of life seriously. This has been demonstrated in many longitudinal studies (2, 5). Because of the cross-sectional nature of the study, this study didn't determine baseline & progressive CD4 count. Hence, it was difficult to adjust treatment effects for important clinical predictors, such as CD4 counts, and disease stage, which are known to be associated with HRQOL as a result CD4 count & WHO staging were not associated with HRQOL in this study similar finding was observed by Chenglong Liu et al in longitudinal study among PLHIV women in U.S.A identified biological (CD4+ cell counts and HIV viral load) variables were not significantly associated with QOL changes from baseline. Some researchers argued and explained that, this phenomenon might be explained by the weak associations between these biological variables and QOL (31)

We were also interested in the relationship between antiretroviral therapy and HRQOL. Persons with HIV disease (ART Naïve) have demonstrated low HRQOL score than those on ARV treatment. Accordingly, PLHIV on ART demonstrate mean score HRQOL 14.3 (SD=±1.7) Vs 13.3 (SD= ±2.2) for ART naïve group (tdf 392 = 4.39, P<o.oo1). In bivariate analysis the association was 2.77 times higher HRQOL as compared to those ART Naïve (AOR = 2.77, 95% CI: (1.61, 4.78). Literatures agreed that Quality of life can be altered by both the immediate effects and the longer-term consequences of antiretroviral treatment (12, 16, and 22).

Despite concerns that self-report may overestimate; several studies have demonstrated a strong association between self-reported adherence and both virological and immunological outcomes in HIV, Self-reported adherence has also been shown to correlate with plasma concentrations of antiretroviral medications (31). In this study on multivariate analysis adherence to HAART in greater than 95 % (AOR: 3.43, 95% CI: (1.52,7.70), and being aware of HIV status greater than one year (AOR= 2.22,95% CI, (1.33,3.70)) , Having treatment buddy (AOR = 1.94, 95% CI, (1.18, 3.19), have emotional Care giver (AOR =,95% CI, 2.21 (1.15,4.27) were identified as independent predictors of good HRQOL in the clinical & behavioral variables. The same finding was also established from studies in south Ethiopia by Kebede etal. Participants treated for >12 months had higher mean scores for all domains than those who had been treated for ≤12 months. Likewise, Participants adhering to treatment had better mean scores for all scales except 'role physical,' 'bodily pain' and 'vitality' in comparison to those who were not adherent (23, 30). However, the possibility that one or more HRQOL dimensions are causes of differences in adherence (adherence causes QOL or QOL causes adherence) cannot be demonstrated, given that this is a cross-sectional (not longitudinal) study.

7. Strength & Limitation of the study

7.1 Strength of the study

1. Tests the validity of the Amharic version of WHO HRQOL- HIV bref , so other researches can Use it.
2. The original data collection tool is a standardized tool and all the data coding, transforming and analysis procedures was made based on WHO manual . This will have added value in ensuring the quality of data with and the comparability of the research others.

7.2 Limitations of the study

Due to cross-sectional nature of the study this study was not able to assess it may fail the ability to detect changes over time for some variables.

8. Conclusion

- The level of total quality of life and the six domain of health related quality of life are moderately low compared to many findings.

- Of all domains, the social, environmental & Psychological domains are at the lowest level and significantly affect the overall QOL of PLHIVs in the study area.

- Being on ART , income, good adherence to HAART , being aware of HIV status greater than one year , have emotional Care giver, Having treatment supporter , got Prophylactic treatment for opportunistic infection & education, were identified as independent predictors of good HRQOL.

- This study also showed that the Amharic version of the WHO HRQOL HIV- bref is a valid and reliable instrument to assess the HRQOL of PLHIV.

9. Recommendation

➢ *For Clinicians*

- Clinicians need to be aware of the factors & dimensions that affect QOL of PLHIVs and need to asses and modified early in the course of an HIV/AIDS patient's treatment plan so as to get secession HIV care & treatment.

- Equal to treatment care, educational and counseling programmes for PLHIV and their family members need to be enhanced.

➢ *For Policy Makers*

- In addition, social interventions policy makers seek to enhance the economic and employment opportunities for PLHIVs. Different employment & income generating schemes designed and provided specially for PLHIV with low income.

- In each ART site there is a need to assign social workers and adherence supporter side by side to clinical care givers

- NGOs and GOs Institutions need to strengthen & harmonize efforts for comprehensive care & support of PLHIV

➢ *For researchers*

- Further investigation using longitudinal design and/or qualitative study is recommended; hence it might clarify how QOL evolves over time and might also allow examination of the direction of a relationship between HIV-specific features (e.g., HIV progression; response to new therapeutic regimes) and HRQOL out comes.

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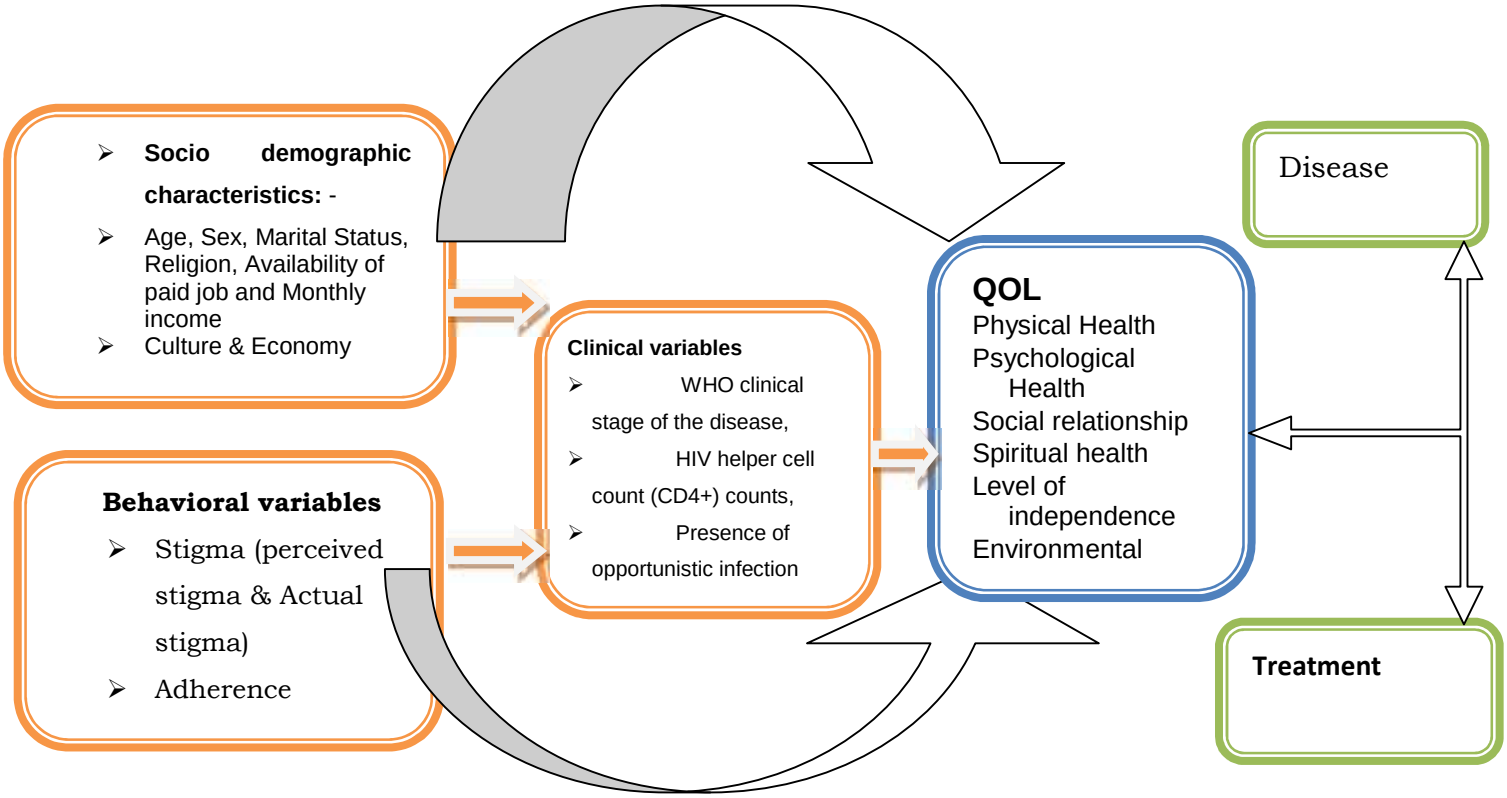
11. ANNEXES

Annex I

Conceptual framework



Annex II: ENGLISH QUESTIONNAIRE

UNIVERSITY OF GONDAR COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

QUESTIONNAIRES TO ASSESS QUALITY OF LIFE AND ASSOCIATED FACTORS AMONG PEOPLE LIVING WITH HIV/AIDS IN SOUTH WOLLO ZONE, NORTH EAST ETHIOPIA

Hello! My name is ---------- I am MPH student in university of Gondar. The purpose of this questionnaire is to gather information on quality of life and associated factors among people living with HIV/AIDS in south Wollo zone, north east Ethiopia.

I have identified you as a study participant hoping that you would be willing to help provide me with some information. I have several questions which I would like to ask you, if you have the time and are willing. The questionnaires include socio demographic factors, quality of life instruments, and clinical factors. All information you provide was kept confidential. I will not include any identifiers, such as your name or exact address. Only honest answers would contribute to improvement of health planning. Your role in the success of the research is important and I appreciate your contribution to the research. You can with draw at any time during the interview if you feel uncomfortable. Would this be okay with you?

I understood about the advantage of the research and the roles I will have in the research. I have agreed to participate in the research.

Yes No

001. Questionnaire Code _____

002. Address/ kebele ----------

003. Category _____ART _____ ART NAVIE

Date of data collection----------

Name of data collector---------- signature----------

Name of supervisor---------- signature----------

SECTION 1. RESPONDENT'S BACKGROUND INFORMATION				
S.No	**Questions**	**Alternatives**	**Code**	**Skipping**
101	Residence	1. Rural 2. Urban		
102	Sex	• Male • Female		
103	Age in completed years	Age: _____ years		
104	What is your ethnicity?	1. Amhara 2. Tigrie 3. Oromo 88.Others, please specify_____		
105	Your educational status	1. Illiterate 2. read and write 3. elementary 1st cycle 1-4 4. elementary 2nd cycle 4-8 5. high school 9-10 6. preparatory 7. TVT 8. college or university		
106	What is your current religion?	1. Orthodox 2. Catholic 3. Protestant 4. Moslem 88. Other (specify) _____		
107	What is your current marital status?	1. Never married 2. Married 3. Divorced 4. Separated 5. Widowed		
108	Are you currently have a job for pay	1. Yes 2. no		
109	What is your monthly income	_____ Birr 99. I don't have		
110	What is your occupation?	1. Civil servant 2. Housewife 3. Merchant 4. Driver 5. Farmer 6. Daily laborer 7. Housemaid 88. Others, specify _____		

SECTION II. Support & Behavioral characteristics				
S.No	**Questions**	**Alternatives**	**Code**	**Skipping**
201	Are you currently receiving any financial or material support or grant	1. Yes 2. No		203
202	If yes to q 201 As per your perception is the support adequate to lead your life	1. Yes 2. No		
203	Do you have physical care giver	1. Yes 2. No		205
204	Who gave you the support	1. Family members 2. Outside family members 3. Orphan &other care centers 4. Others please specify ----------		
204	Do you have emotional care giver or have you had emotional assistance	1. Yes 2. No		
205	have you have treatment buddy	1. Yes 2. No		

SECTION III. Clinical parameters filled by clinician from the patients card				
S.No	**Questions**	**Alternatives**	**Code**	**Skipping**
301	Adherence to dose of ARVs over the last one month	1. Good 2.Fair 3.poor		
302	Adherence to schedule	1. Never 2 .Sometimes 3 Most of the time 4. Always		
303	Month of knowing your HIV status	_____ months		
304	Most recent Cd4 count	_____cells/mm^3		
305	Most recent Cd4 count	1.WHO stage one 2.WHO stage two 3. WHO stage three 4.WHO stage four		
306	Prophylaxis treatment for opportunistic infection ?	1. Yes 2. No		

Part IV : Health Related Quality of Life (WHOHRQA) questionnaire

Code	Question	Very Poor	Poor	Neither poor nor Good	Good	Very Good
401	How would you rate your quality of life					

Code	Question	Very Dissatisfied	Dissatisfied	Neither Satisfied Nor Dissatisfied	Satisfied	Very Satisfied
402	How satisfied are you with your health					

The Following ask about how much you have experienced certain things in the last two weeks

Code	Question	Not at all	A little	A moderate amount	Very Much	An Extreme Amount
403	To what extent do you feel that physical pain prevents you from doing what you need to do?					
404	How much are you bothered by any physical problems related to your HIV infection?					
405	How much do you need any medical Treatment to function in your daily life?					
406	How much do you enjoy life?					
407	To what extent do you feel your life to be meaningful?					
408	To what extent are you bothered by people blaming you for your HIV status					
409	How well are you able to concentrate?					
410	How safe do you feel in your daily life?					
411						

	How healthy is your physical environment?					
412	Do you have enough energy for everydayLife?					
413	Are you able to accept your bodily Appearance?					

Code	Question	Not at all	A little	A moderate amount	Very Much	An Extreme Amount
414	Have you enough money to meet your needs					
415	To what extent do you feel accepted by thePeople you know?					
416	How available to you is the information thatyou need in your day-to-day life?					
417	To what extent do you have the opportunityFor leisure activities?					

		Very poor	poor	Neither poor nor good	Good	Very good
418	How well are you able to get around?					

Code	Question	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
419	How satisfied are you with your sleep?					
420	How satisfied are you with your ability to perform your daily living activities					
421	How satisfied are you with your capacity for Work?					

422	How satisfied are you with yourself?					

Code	Question					
423	How satisfied are you with your personal Relationships?					
424	How satisfied are you with your sex life?					
425	How satisfied are you with the support you get from your friends?					
426	How satisfied are you with the conditions ofYour living place?					
427	How satisfied are you with your access tohealth services?					
428	How satisfied are you with your transport?					

The following question refers to how often you have felt or experienced certain things in the last two weeks.

code	Questions	Never	Seldom	Quite often	Very often	Always
429	How often do you have negative feelings such as blue mood, despair, anxiety, depression?					

430	How much do you fear the future?					
431	How much do you worry about death?					

ANNEX III- Amharic Questionnaire

የሚከተሉት ጥያቄዎች ስለጤናዎ ስለአኗኗርዎና ሌሎች ሂዎትዎትን በተመለከተ የሚጠይቁ ናቸው። እያንዳንዱጥያቄ ከምርጫቸው ጋር አነብልዎታለሁ። እባክዎ ለእረስዎ የተሰማዎትን አንዱን ብቻ ይምጡ በመልስዎ እርግጠኛ ካልሆኑ መጀመሪያ ያሰቡትን በአብዛኛው ትክክል ነው።
እባክዎ ከአእምሮ የወደፊት ተስፋዎትን ደስታዎትን አኗኗርዎትን እና ሌሎች ትኩረት የሚሰጡባቸውን ጉዳዮች ይሰቡ ባለፉት 4 ሳምንታት ስለህይዎትዎ አንዳንድ ጥያቄዎች አቀርብልዎታለሁ። በተቻለዎት መጠን ጥያቄዎችን ለመመለስ ይሞክሩ። ለዚህ ጥናት መልስ በመስጠት ስለተባበሩን አመሰግናለሁ።

የመለያ ቁጥር _____

የካርድ ቁጥር _____

የጥናት መለያ ቁጥር _____

ክፍለ አንድ - አጠቃለይ መረጃ			
ተቁ	**ጥያቄ**	**አማራጭ**	**ኮድ**
101	**የመኖሪያ አድራሻ**	1. **ገጠር** 2. **ከተማ**	
102	**ፆታ**	1. **ወንድ** 2. **ሴት**	
103	**እድሜ**	------- **ዓመት**	
104	**ብሔር**	1. **አማራ** 2. **ትግሬ** 3. **ኦሮሞ** 4. **ሌላ ባክዎን ይግለፁ**-------	
105	**የትምህርት ደረጃዎ**	1. **ማንበብ መፃፍ የማይችል** 2. **ማንበብ መፃፍ የሚችል** 3. **አንደኛ ደረጃ** 4. **ክፍተኛ ሁለተኛ ደረጃ** 5. **ኮሌጅ ወይም ዩኒቨርሲቲ**	
106	**ኃይማኖት**	1. **ኦርቶዶክስ** 2. ካቶሊክ 3. **ኘሮቴስታንት**	

		4. ሙስሊም 5. ሌላ ካለ ይጠቀስ---	
107	የትዳር ሁኔታ	1. የላገባ/አግብቶ የማያውቅ/ 2. ባለትዳር 3. አግብቶ/ / የፈታ /ች/ 4. የሞተባት 5. ሌላ ይጥቀሱ----------	
108	ክፍያ የሚያስገኝ ስራ በመስራት ላይ ነህ/ሽ/	1. አዎ ወደ ቁጥር 10 2. አይደለም /ቁጥር 11/	
109	የወርሃዊ ገቢ ምን ያህል ነው?	_____ብር	
110	ሙያ /ስራ/	1. የመንግስት ሰራተኛ 1. የቤት መቤት 2. ነጋዴ 3. ገበሬ 4. የቀን ሰራተኛ ወይም የቤት ሰራተኛ 5. ሹፌር 6. ሌላ ካለ ይጠቀስ---------	

ክፍል-2 ድጋፍና ክብካቤን የሚመለከቱ ጥያቄወች				
ተቁ	ጥያቄ	አማራጮች	ኮድ	
201	በአሁኑ ሰአት የገንዘብ ወይም የቁሳቁስ ድጋፍ አለዎት?	1. አዎ 2. አላገኝም		
202	ለጥያቂ 201 መልስዎ አዎ ከሆነ የሚያገኙት ድጋፍ ኑሮዎትን ለመምራት በቂ ነው?	1. አዎ 2. . አይደለም		
203 204	አካላዊ ክብካቤ የሚሰጠዎት አለ? ለጥያቄ ቁጥር 203 መልሰዎ አዎ ከሆነ ክብካቤ የሚሰጠዎት ማን ነው?	1. አዎ 2. የለም 3. አልፈልግም 1. የቤተሰብ አባላት 2. ከቤተሰብ አባላት ውጭ 3. ሌላ ይጠቀስ _____		205
205	መንፈሳዊ ድጋፍ የሚያደርግልዎት አለ?	1. አዎ 2. የለም		
206	የህክምና ድጋፍ የሚያደርግለዎት አለ?	1. አዎ 2. የለም		

ክፍል 3 የህክምና መረጃዎችን በተመለከተ - በጤና ባለሙያዎች የሚሞላ			
ተ/ቁ	ጥያቄ	አማራጭ	ኮድ
301	በአለፈው አንድ ወር የመድኃኒት አወሳሰድ በተመለከተ	1 .ከፍተኛ ከ 95 % በላይ መድሀኒቱ በትክክልተወስዷል:: 2 መካከለኛ ከ80-95 3 ዝቅተኛ ከ 80% በታች መድኃኒቱን ተወስዷል	
302	ቀጠሮን በትክክል የመከታተል ሁኔታ	1. በፍጽም አያክብርም 2. አልፎ አልፎ 3. አብዛኛው ቀጠሮን ያከብራል 4. ሁልጊዜ ቀጠሮ ያከብራል ታከብራለች	
303	ኤች አይቪ ተመርምረው ራስዎን ካወቁ ስንት ጊዜ ሆነዎ	_____ወራት	
304	የሲዲ 4 ሴሎችን በተመለከተ	የመጨረሻ ወይም የቅርብ ጊዜ የሲዲ 4 ሴሎች መጠን _____	
305	በአለም የጤና ደረጂት (WHO) የኤች አይቪ ደረጃ መሰረት ህመምተኛው አሁን ያለበት ደረጃ	1.ደረጃ አንድ 2. ደረጃ ሁለት 3. ደረጃ ሁለት 4. ደረጃ አራት	
306	ህመምተኛው ቅድመ መከላከያ መድሀኒት (ኘሮፍላክሲስ)እየወሰደ	1. አዎ 2.አይደለም	

	ነው		

ክፍል 4 - አጠቃላይ የጤንነት ሁኔታ ጥያቄዎች

		በጣም ያመኛል	አልፎ አልፎ ያመኛል	መካከለኛ (ደሕና ነኝ)	ጥሩ ነው	በጣም ጥሩ
1	ጤና አንድት ነው	1	2	3	4	5

		አዎ	አይደለም
2	በአሁኑ ሰአት ታምሜያለሁ ብለው ያስባሉ?	1	2

		ምንም	በጥቂቱ	መካከለኛ	በጣም	እጅግ በጣም
3	በአካላዊ ህመም ምክንያት ያሉበትን ስራ ለመስራት ምን ያህል አዳጋች ነው ብለው ያስባሉ?	1	2	3	4	5

4	ኤች አይ ቪ በደምዎ ውስጥ በመኖሩ ምክንያት በአካልዎ የሚታዩ ለውጦች ምን ያህል ያስጨንቅዎታል?	1	2	3	4	5
5	የእለት ከእለት ተግባርዎትን ለማከናወን ምን ያህል የህክምና አገልግሎት ያስፈልጋል ብለው ያስባሉ?	1	2	3	4	5
6	በህይወትዎ ምን ያህል ደስተኛ ነዎት?	1	2	3	4	5
7	ምን ያህል ትርጉም ያለው ህይወት እየኖርኩ ነው ብለው ያስባሉ?	1	2	3	4	5
8	ኤች አይ ቪ በደምዎ ውስጥ በመኖሩ ምክንያት ምንያህል የጥፋተኝነት ስሜት ይሰማዎታል ?	1	2	3	4	5

		ምንም	በጥቂቱ	መካከለኛ	በጣም	እጅግ በጣም
9	ለነገሮች ምን ያህል አትኩሮት መስጠት ይችላሉ?	1	2	3	4	5
10	በእለት ከእለት ኑሮዎ ምቾት ወይም ደህንነት ይሰማዎታል?	1	2	3	4	5
11	የመኖሪያ አካባቢዎ ምን ያህል ለጤና አመች	1	2	3	4	5

	ነው?					

		ምንም	በጥቂቱ	መካከለኛ	በጣም	እጅግ በጣም
12	በእለት ከእለት ኑሮዎን ለማከናወን በቂ ጉልበት አለዎት?	1	2	3	4	5
13	ከህመም ጋር ተያይዞ የሚከሰቱ የአካል ወይም የሰውነት ለውጦች (የሰውነት መቀነስ፤መቁሰል፤ወዘተየመሳሰሉት) ምን ያህል ተቀብለውታል?	1	2	3	4	5
14	መሰረታዊ ፍላጎትዎትን ለማሟላት በቂ ገንዘብ አለዎት?	1	2	3	4	5
15	በሚያውቋቸው ሰዎች ምን ያህል ተቀባይነት አለኝ ብለው ያምናሉ?	1	2	3	4	5
16	በእለት ከእለት ተግባርዎ የሚያስፈልግዎን መረጃ ምን ያህል ያገኛሉ ?	1	2	3	4	5
17	ምን ያህል እስዎን ያዝናናሉ?	1	2	3	4	5
		በጣም ዝቅተኛ	ዝቅተኛ	መካከለኛ	ጥሩ	በጣም ጥሩ
18	እንደፈለጉ መንቀሳቀስ ይችላሉ?	1	2	3	4	5
19	ምን ያህል በእንቅልፍዎ ይረካሉ ?	1	2	3	4	5
20	የእለት ከእለት ተግባርዎን ለማከናወን ባለዎት ችሎታ ምን ያህል ይለካሉ?	1	2	3	4	5
21	ባለዎት የመስራት አቅም ም ያህል ይረካሉ?	1	2	3	4	5
22	በራስዎ ምን ያህል ደስተኛ ነዎት?	1	2	3	4	5

		በጣም ደስተኛ አይደለሁም	ደስተኛ አይደለሁም	መካከለኛ ደስታ አለኝ	ደስተኛ ነኝ	በጣም ደስተኛ ነኝ
23	ከሌሎች ሰዎች ጋር ባለዎት ግንኙነት ምን ያህል ደስተኛ ነዎ?	1	2	3	4	5
24	በወሲብ ህይዎትዎ ምን ያህል ደስተኛ ነዎት?	1	2	3	4	5
25	ከጓደኞችዎ በሚያገኙት ድጋፍ ምን ያህል እረክተዋል?	1	2	3	4	5
26	በመኖሪያ ቦታዎና አካባቢዎ ባሉ ሁኔታች ምን ያህል ደስተኛ ነዎት?	1	2	3	4	5
27	ባለው የጤና አገልግሎት አቅርቦት ምን ያህል እረክተዋል?	1	2	3	4	5

28	ባለው የመንገባ አገልግሎት ምን ያህል ደስተኛ ነዎት?	1	2	3	4	5

		በፍጹም	በጥቂት	አንዳንድ ጊዜ	በአብዛኛው ጊዜ	ሁልጊዜ
29	ጥሩ ያልሆኑ ስሜቶች ለምሳሌ ድብርት፤ ጭንቀት፤ ፍርሃት፤ መፍዘዝ፤ ተስፋ መቁረጥ፤ የመሳሰሉት ምን ያህል ተከስቶቦዎታል?	5	4	3	2	1

		ምንም	በጥቂቱ	መካከለኛ	በጣም	እጅግ በጣም
30	ስለወደፊቱ ምን ያህል ይፈራሉ?	1	2	3	4	5
31	ስለመሞት ምን ያህል ይጨነቃሉ?	1	2	3	4	5

ስለትብብዎ በጣም እናመሰግናለ

Annex- IV: Information Sheet and Consent Form

Title of the Research Project; Assessment of quality of life and associated factors among adult people living with HIV/AIDS in south wollo zone, North east Ethiopia

Name of Principal Investigator: Askal Demssie

Name of the Organization: School of Public Health, Gondar College of Medicine and Health Sciences, University of Gondar.

Name of the Sponsor: University of Gondar

Introduction: This information sheet and consent form is prepared to explain the purpose of this research in order to get your willingness to participate in the study. The main aim of this research project is to assess the quality of life and associated factors among people living with HIV/AIDS in south wollo zone, Ethiopia.

The research team includes principal investigator, six nurses, two Supervisors and two advisors from University of Gondar.

Purpose of the Research Project: The main aim of this study is to assess quality of life and associated factors among people living with HIV/AIDS, who came for chronic care and treatment, in south wollo zone. As this will provide valuable information and input for devising strategy and clinical guide line at ART treatment site

Procedures: In order to assess the quality of life and associated factors among people living with HIV/AIDS we invite you to participate in the project. If you are willing to participate in the project you understand and sign the consent form .then, you will requested to give your response by the data collectors. Study participants are people living with HIV/AIDS who came for chronic care and treatment in south wollo zone during the study period and who are selected by systematic random sampling technique.

Risk and /or Discomfort: By participating in this research project you may feel that it has some risk or discomfort but there is no risk or discomfort unless it will take about 15 to 20 minutes of your time.

Anticipated Benefits: If you are participating in this project, the output of the study will have both direct and indirect benefit to you, as you and your families will use the service in the future.

Sharing of new findings

The investigators will analyze the information from the survey. They will give the results of the survey to all stake holders who are working in the area of HIV/AIDS care and treatment.

Incentives/Payments for Participating: You will not be provided any incentives or payment to take part in this project.

Confidentiality: The information collected from you was kept confidential. It was stored in a file using codes and your name will not be mentioned in recording or data analysis. And it will not be revealed to anyone except the principal investigator. In addition it was used only for this particular research but not other purposes.

Right to Refusal or Withdraw: You have the full right to refuse from participating in this research. You have also the full right to withdraw from this study at any time, if you have any inconvenience. You will not deny the right of care for not participating. You can ask the questions for any ambiguity.

Person to contact: This research project was reviewed and approved by the institutional review board of school of public health, university of Gondar. If you want to know more information, you can contact the following individuals and you may ask at any time you want.

1. Askal Demssie

   Mobile: +251911014874 / e-mail: askald21@gmial.com

2. Dr. Belaynew Wassie, University of Gondar, School of Public Health, College of Medicine and Health Sciences,

   Mobile: +251918778268

   e-mail :bwassie@gmail.com

3. Prof. Mengesha Admasu, University of Gondar, School of Public Health, College of Medicine and Health Sciences,

   e-mail :kal_meng@yahoo.com

ANNEX VI Amharic version information Sheet and Consent Form

የመረጀና የስምምነት ዉል ፎርም

የምርምር ፕሮጀክቱ ርዕስ - በደቡብ ወሎ ዞን በሚገኙ የኤች.አይ.ቪ ቫይረስ በደማቸው ውስጥ ያለ

የፀኤች.አይ.ቪ ህክምና አገልግሎት ተጠቃሚወችን የጤንነት ሁኔታ መዳሰስ

የዋና ተመራማሪዉ ስም - አስካል ደምሴ

የድርጅቱ ስም ፡- በጐንደር ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ቤት

ወጭዉን የሚሸፍነዉ አካል፡- በጐንደር ዩኒቨርስቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ቤት

መግቢያ፡- ይህ መረጃና ስምምነት የተዘጋጀበት ዋና አላማ በምርምር ፕሮጀክቱ የሚሳተፉ የምርምር ፕሮጀክቱ አባላት ስለ ፕሮጀክቱ እንድያብራሩበት ታስቦ ነዉ፡፡ የጥናቱ ቡድንም ስድስት ድፕሎማ ያላቸዉን ነርሶች፣አንድ ድግሪ ያለዉን ተቆጣጣሪና ሁለት አማካሪዎችን ከጐንደር ዩኒቨርሲቲ ያከተተ ነዉ፡፡

ጥናቱ የሚካሄድበት ምክንያት:- የፕሮጀክቱ ዋና አላማ በደቡብ ወሎ ዞን የሚገኙ የኤች.አይ.ቪ ቫይረስ በደማቸው ውስጥ ያለ የኤች.አይ.ቪ ህክምና አገልግሎት ተጠቃሚወችን የጤንነት ሁኔታ የዳሰሳ ጥናት ለማድረግ ሲሆን በተጫማሪም በጥናት ላይ የተመሠረተ የጤና ፖሊሲ ለማዉጣት እንደምያግዝ የታመነበት ነዉ፡፡

አተገባበር: በደቡብ ወሎ ዞን የሚገኙ የኤች.አይ.ቪ ቫይረስ በደማቸው ውስጥ ያለ የኤች.አይ.ቪ ህክምና አገልግሎት ተጠቃሚወችን የጤንነት ሁኔታ ለመዳሰስ በተዘጋጀዉ ጥናት ድርሻ እንድኖሪዎ ጋብዘነዎታል፡፡በፕሮጀክቱ ለመሳተፍ ፈቀዴኛ ከሆኑ ሊፈርሙ ይገባል፡፡ከዚያም በመረጃ ሰብሳቢዎች ምላሽዎን እንድሰጡ ይጠየቃሉ፡፡በዚህ ጥናት እንድሳተፉ የተመረጡት በናሙና አወሳሰድ ስልት ነዉ፡፡የሚሰጡት መረጀ በአጠቃለይና የጥናቱ ዉጤት በተናጠል ማንም በማያገኛዉ መልኩ በመለያ ቁጥር ሚስጢራዊነቱ የተጠበቀ ይሆናል፡፡

ሊገጥም የምችል ችግር ወይም አለመመቸት፡-በዚህ ጥናት በመሳተፍዎ ምንም አይነት የሚደርስብዎ ችግር የለም፡፡ መጠይቁን ለመሙላት የተወሰነ ሰአት (15-20 ደቂቃ) ሊወስድበዎ ይችላል ነገር ግን ይህ ጥናት ለወደፊቱ ለዕርስዎና ለህብረተሰቡ ካለው ጥቅም አኳያ ይህ ብዙ አይደለም:፡ ስለዚህ የእርስዎ መልስ ክፍተቱን ለማሳየትና ለማሻሻል ጠቃሚ ግብዓት ነዉ:፡

ጥቅሞች፡- በዚህ ምርምር ስላተሳተፉ ለእርስዎ በቀጥታ ወይም በተዘዋዋሪ ጥቅም ይኖረዎታል፡፡ ምክንያቱም ጥናቱ የኤች.አይ.ቪ ቫይረስ በደማቸው ውስጥ ያለ የኤች.አይ.ቪ ህክምና አገልግሎት ተጠቃሚዎችን የጤንነት ሁኔታ ለማሻሻል ያለመ በመሆኑ እርስዎና ቤተሰብዎ የአገልግሎቱ ተጠቃሚ ይሆናሉና፡፡

ለመሳተፍ ጥቅማጥቅም/ክፍያ: በዚህ ጥናት በመሳተፍዎ ምንም ክፍያ አይሰጥዎትም፡፡

ሚስጢራዊነት፡-ከዚህ ምርምር ፕሮጀክት የተሰበሰበ መረጃ ምስጢራዊ ይሆናል፣ስለ እርስዎ የተሰበሰቡት መረጃዎች ስምዎ ሳይጻፍበት በሚስጥር ይያዛል ይህም ከዋና ተመራመሪዉ በስተቀር ማንም እዳያዉቀዉ ያደርጋል፡፡

ዕንቢ የማለት ወይም የማቋረጥ መብት፡-በዚህ ምርምር የመሳተፍም ሆነ ያለመሳተፍ ሙሉ መብት አሎት፡፡ጥያቄዎቹን ሙሉም ሆነ በከፊል መልስ አለመስጠት ይችላሉ፡፡ይህ ደግሞ ማንኛዉንም የጤና አገልግሎት ከማገኛት አያግድወትም፡፡እንድሁም በማንኛዉም በፈለጉ ሰዓት ያለምንም መቀጮ የማቋረጥ ሙሉ መብት አለዎት::

ሊያገኙአቸዉ የሚችሉአቸዉ ሰዎች:- ይህ የምርምር ፕሮጀክት በጐንደር ዩኒቨርሲቲ የጥናትና ምርምር ስነ-ምግባር ኮሚቴ ተከልሶ ይጸድቃል::ተጨማሪ መረጃ ማወቅ ከፈለጉ የኮሚቴዉን አባላት ከዚህ በታች በላዉ አድራሻ ማግነት ይችላሉ፡፡ጥያቄ ከለዎት ከሚከተሉት ግለሰቦች ማናቸዉንም በፈለጉ ሰዓት መጠየቅ ይችላሉ፡፡

- አስካል ደምሴ፡ : ስልክ- +251911014874 /

  e- mail: askald21@yahoo.com

- ዶ/ር በላይነው ዋሴ ፡በጐንደር ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ቤት

  ስልክ- +251918778268

  e-mail :bwassie@gmail.com

ፕሮፌሰር መንገሻ አድማሱ ፡በጐንደር ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ትምህርት ቤት

e-mail :kal_meng@yahoo.com

ጐንደር ዩኒቨርሲቲ የህክምናና ጤና ሳይንስ ኮሌጅ የሕብረተሰብ ጤና አጠባበቅ ትምሕርት ቤት

በጐንደር ዩኒቨርሲቲ የህክምናና ጤና ሳይንስ ኮሌጅ በሕብረተሰብ ጤና አጠባበቅ ትምሕርት ቤት የኤች.አይ.ቪ ቫይረስ በደማቸው ውስጥ ያለ የኤች.አይ.ቪ ህክምና አገልግሎት ተጠቃሚወችን የጤንነት ሁኔታ ለማጥናት የተዘጋጀ ቃለ መጠይቅ ቅጽ፡፡

- የካድ ቁጥር _____
- የጠያቂዉ ስም _____
- ቃለ መጠይቁ የተደረገበት ቀን _____/_____/ 2003 ዓ.ም
- የጤና ጣቢያው ስም _____
- የተቆጣጣሪዉ ስም _____
- ፊርማ _____ ቀን ____/_____/2003 ዓ.ም

Annex –VII: Declaration

I, the undersigned, senior MPH student declare that this thesis is my original work in partial fulfillment of the requirement for the degree of Master of Public Health.

Name: _____

Signature: _____

Place of submission: School of public Health, College of Medicine and Health Sciences, University of Gondar.

Date of Submission: _____

This thesis work has been submitted for examination with my/ our approval as university advisor(s).

Advisors

Name	Signature
_____	_____
_____	_____